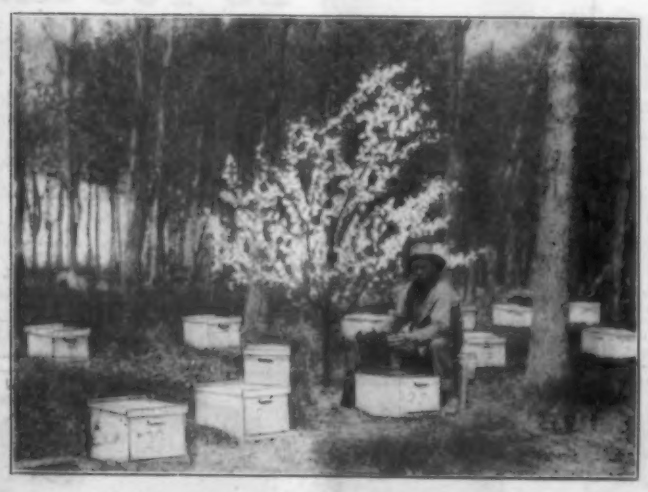
46th Year OCTOBER 4, 1906 Number 40

AMERICAN BEE JOURNAL

APIARY OF J. H. MCGUFFIN, OF MART, TEX.
(See page 830)



WM. H. ROOT AND APIARY, OF CARROLL, NEBR.
(See page 830)

THIRTY-TWO PAGES

American Bee Journal

THE AMERICAN BEE JOURNAL

PUBLISHED WEEKLY BY

GEORGE W. YORK & COMPANY

334 Dearborn Street, Chicago, Ill.

IMPORTANT NOTICES.

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States, Canada, and Mexico; all other countries in the Postal Union, 50 cents a year extra for postage. Sample copy free.

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1st.—To promote the interests of its members.
2d.—To protect and defend its members in their lawful rights.
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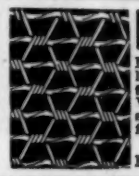

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American Bee Journal

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All for **$3.00**

(This cut is the full size of the Knife.)

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Queen

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☞ Sample copy of the American Bee Journal free; trial trip of three months (13 copies) for 20c; regular yearly price, $1.00. Address all orders to

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FARMER'S CALL, Quincy, Ill.

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That covers the whole Apicultural Field more completely than any other published, send $1.20 to
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FOR HIS
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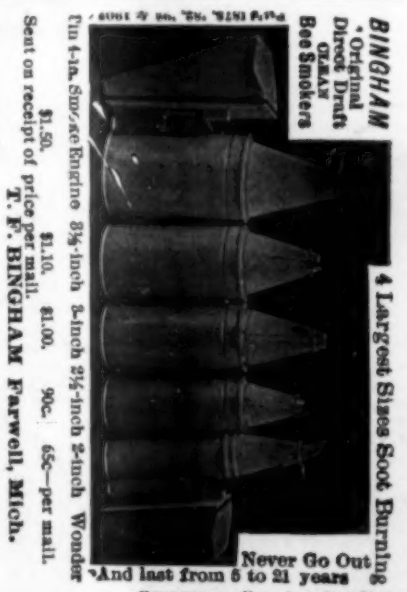

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2½-inch 90c.
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OTISVILLE, PA., Jan. 18, 1906.

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☞ J. G. Goodner, of this State, writes me that "he prefers to pay $25.00 for a Rietsche Press rather than do without it."—A. G.

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American Bee Journal

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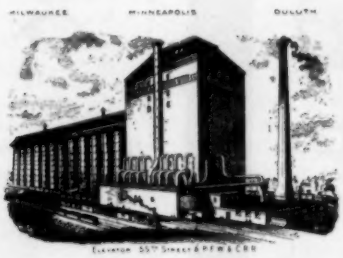
Yours very truly, THE A. I. ROOT CO.



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Very truly Yours
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Ill.

Get your order off at once and claim our 7 percent September early-order cash discount. If you can't make up your specifications to-day send along your remittance to cover approximately your needs, and claim the discount, and let your order follow by later mail. If you want goods to the amount of $50 remit us only $46.50. Other amounts in proportion. Claim the benefit of the discount when your remittance is sent. Send orders and remittances either to our home office, branch offices, or jobbing agents. Notice list of names of principal dealers in last issue of this paper.

Dealers at remote points can not always make the same prices and discounts that we do at Medina, but are able to do so in many cases. Correspond with such dealers direct on these matters.

THE A. I. ROOT CO.

(Entered at the Post-Office at Chicago as Second-Class Mail-Matter.)

Published Weekly at $1.00 a Year, by George W. York & Co., 334 Dearborn Street.

GEORGE W. YORK, Editor | CHICAGO, ILL., OCTOBER 4, 1906 | **Vol. XLVI—No. 40**

Keeping Queens for a Short Time

It sometimes happens that one may wish to keep a number of queens for a week or more. Generally there will be no trouble in keeping a queen in a shipping-cage a week or so, there being enough candy present for that purpose, if the cage be kept in a cool, dark place with pure air. For a longer time, one would naturally think of giving the cages to a queenless colony, and in some cases that has been successful, but so experienced a man as W. H. Laws says in the Canadian Bee Journal:

I lost the larger part of 40 queens once caged in the upper story of a queenless hive, the bees selecting a few, which they nursed and fed up to the egg-laying degree, while the others they treated as strangers, tormenting and pulling at them through the screen, where I found them dead a few days later.

The best success I have known in keeping laying queens outside of the nucleus hives from which they were mated, was by placing them on unfinished sections of honey, placing a solid board on one side and a wire-screen on the other, with a little wad of queenless bees to each queen. In this way I have kept them confined in a perfectly healthy condition until the brood from each queen reared in the section was hatching.

Some Heavy Combs of Honey

On page 769, Mr. W. D. Soper reported that he had harvested 93 pounds of honey in 11 combs, and said, "If there is any other bee-keeper who can show a greater weight of honey in 11 combs, I would like to hear from him." One of the Bee Journal family having made a request to that effect, Mr. Soper has kindly furnished these particulars:

In answer to your inquiry about heavy combs, I will say the size of the frame is 10x12 inches inside. Most of the combs were bulged—about 2 inches thick. The hive is 22 inches inside. It is an old "Michael" hive—a very good one for extracted honey, but poor for comb honey. W. D. SOPER.

It should here be said that this explanation was not necessary in reality, for all that Mr. Soper wanted to know was whether any one had secured 11 combs of greater weight, no matter what the size or proportion of the combs. It must be confessed, however, that without the additional information given, one is at a loss to know whether there is something unusual about the size of the frame, or whether the combs are of unusual thickness. If, for instance, the combs were 10x18 inches, no greater thickness would be necessary to make 11 combs weigh 93 pounds. In reality, the combs were smaller than those in the Langstroth frame, being 10x12, inside measure, and spaced nearly 2 inches from center to center. No matter, however, what the size of frame or thickness of comb, the question is, Who has secured more than 93 pounds of honey in 11 combs?

Co-operation Among Bee-Keepers

We have received the following from Arthur C. Miller, of Rhode Island, in response to an editorial recently published in the American Bee Journal:

EDITOR YORK:—The editorial on page 733, bespeaks an imperfect conception of the scope and form of the present co-operative movement among bee-keepers, commonly called the "Independent Movement." Perhaps I may be permitted to give your readers a little light on the subject.

For several years bee-keepers have felt that certain individuals, directly or through papers or corporations controlled by them, have been working against the bee-keepers' best interests. The straws became heavy timber, and the honey-producers proceeded from grumbling to action. Individuals cast about for local sources of supplies, societies tried to buy for their members, individual and associated effort was made to get honest honey-market reports and accurate knowledge as to crops. Unrest spread all over the country until finally at the St. Louis convention, action was taken looking to the formation of a "Honey-Producers' Exchange of America." Before this new body (to be composed solely of honey-producers, and excluding all interested in the manufacture or sale of supplies) could be organized, there sprang into being in Chicago, a "Honey-Producers' League." This latter body was ostensibly for much the same purpose as the Exchange previously referred to. Owing to the fact that among the organizers were representatives of supply firms and trade papers, and men who did not have the confidence of the honey-producers, the League was looked upon with suspicion, and, finally, instead of winning the confidence of the bee-keepers, aroused their anger and hastened action among themselves.

The Editor has called this action "co-operation," but it is not co-operation in the commonly accepted meaning of that term. In some instances local societies acting alone; in others, the county societies of a State acting together, have sought and secured special prices for supplies for their members. The goods may be purchased in nearly any quantity, and are ordered and paid for by the individual. The co-operative part, it will be noted, extends only to securing special prices, not to pooling of funds or any other of the forms of co-operative concerns. It is at once positive in its results, and free from opportunity of internal dissension over financial matters. It possesses immense and growing strength, in that being or becoming a member of one of the modernized societies secures to the individual special discounts and opportunities. So long as he is for and with his fellow members, he can remain in the society and secure the same benefits as the rest, but if he works against them, then his sojourn with them is certain to be decidedly unpleasant, even if he is not expelled; and, if he leaves, he forfeits his right to participate in the various benefits. There is every reason for a bee-keeper to become a member of and work with and for the society, and no inducement to work against it, unless he is so venal as to accept pay from some manufacturer or publisher.

The various societies are taking up different plans for the obtaining of special prices, gathering information, conducting investigations, and, in a few cases, joint buying and selling.

Together with a firm determination to run their own affairs, there is a spirit of cheer and hopefulness that bodes well for the future progress and success of the craft.

ARTHUR C. MILLER.

It will be noticed that Mr. Miller starts out by saying that the editorial on page 733, "bespeaks an imperfect conception" of what he calls the "Independent Movement." It is

American Bee Journal

hardly correct to speak of an "imperfect conception" where there is no conception at all; for the said movement was not spoken of in the editorial mentioned, was not hinted at, and, indeed, was not in mind at all.

On the other hand, Mr. Miller will pardon the opinion that his conception of "The Honey-Producers' League" is somewhat imperfect. He says it was ostensibly for much the same purpose as the contemplated "Honey-Producers' Exchange of America." The purpose of the Exchange was to handle the honey crop. The purpose of the League was to get before the public such literature as would benefit honey-producers, but with no thought of handling a pound of honey nor bee-supplies. There was plenty of time to organize the Exchange before the League was mentioned, and there was just as good opportunity after, for so long as the League had no thought of handling honey or bee-supplies in any way, it is incomprehensible how it could hinder the work of the Exchange by giving the Exchange free advertisements.

It may also be said in passing, that equally imperfect was the conception that the League was in any way in conflict with the National Association. The National had no publicity department, nor did it contemplate anything of the kind. The League was occupying ground that no other organization occupied, and was not in competition with anything. Instead of being in any way a damage to the National, it has put into the treasury of the latter some $1400 to be used for the benfit of bee-keepers in general. Perhaps Mr. Miller is right in saying that the action of the League was not co-operation in the commonly accepted meaning of that term, for the number that were willing to co-operate was so small that it certainly could not be called co-operation on a large scale, the result being that a few men paid some $1400 to be used for the benefit of the whole.

Mr. Miller says the League was looked upon with suspicion, because among the organizers were representatives of supply firms and trade papers, and men who do not have the confidence of the honey-producers. It may be pertinent to inquire whether suspicion may not attach to the movement Mr. Miller champions, and on the same ground. Its chief advocate is a trade paper published by a supply firm, Mr. Miller being one of its editors, and it would be nothing unnatural if there should be those who might inquire whether the present move is one altogether of bee-keepers. In any case, the American Bee Journal, having no connection with any supply firm, and interested in supply firms only as they are of interest to bee-keepers, is ready to hail any movement that will advance the interests of bee-keepers, only so that it be convinced that the movement is honestly in that direction.

The San Antonio National Convention, as most of our readers know, is to be held Nov. 8, 9, and 10. So it is about 5 weeks until the meeting. A letter received from the Texas Committee of Arrangements, informs us that they have secured a new, up-to-date hotel for the bee-keepers' headquarters. It is the Grand Central, its rates being 50 cents per night for lodging, and meals 25 cents each. Several "extras" are being planned by the committee, one of which is a trolley ride, and the other a Mexican supper. (No doubt the latter will contain some "hot stuff.") Market Hall has been secured for holding the sessions of the convention.

As before mentioned in these columns, a special car of bee-keepers is being planned to start from Chicago the forenoon of Nov. 6, arriving in San Antonio the morning of Nov. 8. The round-trip rate from Chicago will be $25, with berth two nights for $4.25 extra. All who will be able to join the special car company should write us for descriptive circulars showing points of interest along the route, and also let us know in time so that we can reserve berths in the car. We will arrive in St. Louis the evening of the 6th, where a number of bee-keepers are planning to get aboard. From St. Louis the route will b down through Indian Territory. Some have objected to passing through New Orleans, but the special car will not go anywhere near New Orleans.

Any bee-keepers north and east of Chicago will, no doubt, be glad to be one of the carload that expects to start from here Nov. 6. We will be pleased to do whatever we can to reserve berths and arrange for a pleasant trip for all who can go on the special car.

Mr. Harold Hornor, associate of Wm. A. Selser, the well-known honey-man of Philadelphia and New York City, dropped in to see us recently. He was on a Western trip, visiting honey producers and dealers. The kind of honey they bottle seems to be very scarce.

The Apiary of J. H. McGuffin, of Mart, Tex., is shown on the first page. When sending the photograph, Mr. G. wrote as follows:

I am interested in bees, and love the work and the "old reliable" American Bee Journal, which is my guide to success. I had only 9 colonies that had gathered 500 pounds of horsemint honey by June 30, which finds a ready sale at 12½ cents per pound. I work at my bees noons and on rainy days.

The picture which I send shows, in addtion to the apiary, my mother, sister, little brother and myself. In the background is our country garden, and heavy timber on a creek. We usually have a honey-flow from cotton the first of July. J. H. McGUFFIN.

A Correction.—C. P. Dadant refers to the omission of a word in "No. 18.—Dadant Methods of Honey-Production," as follows:

"Page 800, middle column, second paragraph, should read, 'Some apiarists hold that *good* queen-cells,' etc. Otherwise I seem to make an absurd statement, for we know that colonies rear queen-cells whenever they are queenless."

Mr. W. H. Root, of Carroll, Nebr., and part of his apiary are pictured on the first page this week. Mr. R. wrote thus when sending the photograph:

I enclose a picture of myself and part of my apiary. My real object in the picture was to show the 3-year-old plum tree in full bloom, which was a fair sample of about 100 trees in an adjoining yard or orchard.

W. H. ROOT.

Mr. C. P. Dadant received a postal card recently from Frank Benton, dated at Agra, British India, Aug. 2. He announced his departure for Manila shortly. Agra is at the eastern extremity of Rajpoutana Province, in Central India. Mr. Benton will surely bring back with him very interesting apiarian experiences, an account of which we will hope to have the privilege of placing before our readers.

The Irish Bee Journal recently devoted a page to the Editor of the American Bee Journal, under the title of "Workers in the Field of Bee-Literature." As an editor, Mr. Digges evidently appreciates the work on a weekly like the American Bee Journal as few others would, for he says:

"To prepare and issue every week in the year such a publication as the American Bee Journal, constitutes an amount of work which can admit of few intervals for personal correspondence."

Well, there *is* considerable to do, and so there are practically no vacations for the editor of a weekly bee-paper. However, the work is very pleasant, especially with the faithful and efficient assistants which we are so fortunate to have in and out of our office.

Not the Honey-Comb Kind

Stern Lady—"Why don't you lazy hoboes emulate the busy bees?"

Sandy Pikes—"Ah, lady, we do emulate the busy bees."

Stern Lady—"In what way, pray?"

Sandy Pikes—"Why, ain't we always filling cells?"—*Chicago Daily News.*

The Ohio Farmer, one of the leading weekly farm papers of this country, we offer in connection with the American Bee Journal, both for one year, for $1.35. A sample copy of the Ohio Farmer may be had by sending the request to Cleveland, Ohio. All orders for subscriptions on this combination rate of $1.35 for the two should be mailed to the office of the American Bee Journal.

American Bee Journal

Conducted by LOUIS H. SCHOLL, New Braunsfels, Tex.

Texas Then and Now

Out in the wild woods of Texas,
And on its far-stretched plain,
My mind has often sauntered,
And bright memories return again.
With wild beasts growling, feathered fowl,
The coyotes' howling, and hoot of owl;

With stretches of nectared flowers,
And lofty, mighty forest trees,
In which instead of new-fangled hives,
Lived most of Texas' honey-bees.
But that was in the by-gone past—
Texas has changed, and is changing fast.

Texas Bee-Keeping 27 Years Ago

The incidents of my boyhood days are fresh in my memory, and it is with much pleasure that I write something of bee-keeping in the grand old State of Texas 27 years ago—the land that comes the nearest to flowing with milk and honey.

Permit me to say that I am glad that I was reared, as I was, in Texas. We left Georgia to make that well-reported State our home, and so well were we pleased, and so bright did the prospects become the farther we penetrated the land, that we went as far as we could by railroad; but railroad facilities in Texas at that time were very poor. So we concluded to buy a large ox-wagon, and a large yoke of oxen, and take the country in. We also bought a good wagon-dog, and pulled out. Thus we traveled from place to place for 4 years and 5 months, most of the time in Texas, hunting and fishing; but sometimes we would stop for a month or so, and work to raise some cash to tide us on. Sometimes we were alone; then, again, there would be 50 or more wagons with us.

Many were the incidents that happened along our travels, but the most noted ones were coming in contact with wild animals. It would often happen that we would have to cook meats after dark in the desolate sections, and they would come up howling and growling with hunger, and stare at us with their eyes looking like balls of fire. Often they would crowd us so close that we would be compelled to move on.

But I started to write something of what we saw and experienced of bee-keeping along our travels.

The bee-industry in Texas at that time was not receiving much attention. Log gums were having their day, but some had what they called patented hives of their own get-up and make, and they were complicated affairs, to be sure. Many of them had to be torn completely up to be "robbed," but the movable-frame hive had become recognized, and many of the progressive bee-keepers were using them, but not extensively. Bee-keeping was to be a part of our occupation when we located. So we had our eyes open to the industry, and saw a great future for it, and finally got a bargain in a lot of bees in Wood County, rented a small farm, and, as we thought, settled for awhile, at least.

Our stay was not so long as expected, for we had a severe cyclone in which we came near losing our lives; losing all our supplies and part of our stock; and our little apiary, which was located near a branch on a hill-side, was completely covered with logs, tree-tops and rubbish, so much so that we never saw even a piece of a hive, and but few stray bees. This was the first and last apiary we ever owned in Texas, but many of our neighbors had bees, and were glad to get us to look after them, which paid both them and us well.

We pulled up stakes that fall and started out on the march again. We were not discouraged, and expected to locate again. Bees were well scattered in many portions of the State. Nearly every farmer had an apiary of some size, and the forest was full of bee-trees. The bees were so furious that many of the hives had never been robbed, and the bee-trees were old and rich. Cutting these, hunting and fishing, was the sport of our traveling, and well does the writer remember the many sleigh-loads of nice honey we pulled from the thick forest. Wherever we saw bees on the farms we were most sure of the job of taking their honey. For this we would take in exchange, corn, chickens, meat, so much money, or a certain part of the honey, which we sold along the road.

We cut a bee-tree for an old gentleman by the name of Rush, sawing it off below and above the entrance, nailing on bottom and top, and carried it to his house, setting it up in his yard. Afterwards we received a letter from him, saying the colony had cast 7 swarms, and that he saved 6 of them and had taken off a barrel of honey that season.

We hived a swarm for an old gentleman by the name of Williams, who had about 40 colonies under 2 large peach-trees in his back yard. The bees had settled in the top of one of these trees, and were giving him no little trouble. We hived the bees, throwing a rope over a small fork in the top of the tree, drawing the hive up and letting it swing just over the bees. We remained with him until nearly night, taking off honey. We got all we could out of the job and pulled out, leaving instructions for him to loosen the rope and let the bees down that night. Afterwards we received a letter from him stating that he forgot to let the bees down, the hive got heavy, split the limb off, fell on top of two other hives and tore them all up; also that he and his family were confined in his house for 2 days (except at night), and that his large herd of cattle and other stock he had penned near the bees, broke out, and some of them he had not even heard of.

We traveled on, prospecting and doing all the work among the bees we could. Often we would find well cared-for apiaries, and in some sections many men enthusiastic over bee-keeping. But there were drawbacks to the industry, nearly total honey-failures resulting in a lot of feeding. Transportation was very poor, and in most sections the market no better. Most of the county-seats consisted of only a few families with 1 or 2 stores. A large shade-tree with 2 or 3 punching benches was the Courthouse, or a huge loghouse, or something no better. So the market was indeed poor. Besides, there was plenty of wild honey from the woods.

Mother Nature has greatly enriched portions of Texas with a vast amount of honey-plants. At the same time, men have done their part, and both have made it the greatest honey-country. Oh, that we had men with as much grit and faith in the bee and honey industry all over the South!

Cordele, Ga. J. J. WILDER.

The above recalls to the mind of the writer many an incident relative to the bee-keeping industry in some of the lesser populated districts of the great Lone Star State, even at a later date than that given by Mr. Wilder. Even 15 years ago, there were many places where just such things prevailed as are given in Mr. Wilder's narrative.

The object in giving this narrative at this time is that it seems to be quite opportune and "in season," since the time of the meeting of the National Bee-Keepers' Association at San Antonio is close at hand. It is given for a purpose, to show our Northern and Eastern friends, coming from the older settled States, the newness of our State of Texas in the bee-keeping industry. Those were the times of the six-shooter and the bowie-knife, but the country is much more civilized now than many of the "tenderfeet" might expect.

When the National Bee Keepers' Association comes Texasward, it will see a new country; things may look "wild and woolly," but at the same time, my dear friends, Texas is making great strides forward. She has a bright future. The Texans are also proud of the State. As a honey-producing State, it has forged its way steadily to the front, and, with further development, the industry will improve. I am only saying these things so that strangers may be informed a little ahead, you see.

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Conducted by EMMA M. WILSON, Marengo, Ill.

Our English Sisters

Again the sisters seem to be taking their full part in England. Recently, as recorded in the British Bee Journal, after an examination for certificates as experts, there were granted by the British Bee-Keepers' Association 32 third-class certificates, and of these 23 were to women. Strange to say, not one married woman was in the lot.

Bees Attack a Woman

A swarm of bees in Oak Park improved a shining hour yesterday by taking possession of the kitchen of Mrs. Earl C. Dodds, who was in the kitchen, and the bees objected to her presence. She was attacked by the full strength of the Honey-Makers' Union, and stung severely on the arms and shoulders. A policeman was summoned, and with head covered, he groped his way into the kitchen, where he smoked the invaders out with sulphur.—Chicago Daily.

If the additional statement had been made that a careful count showed the number of bees in question to exceed a million, and that in the space of an hour after entering the kitchen, they built a comb 6 feet long and 4 feet wide, one might not be able to prove to the satisfaction of all that such a thing never happened; but at the same time there is no law compelling belief of such a statement, and without subjecting oneself to criminal prosecution, one may be allowed to indulge in mild doubts as to the truth of the statements really made.

Watering Bees—Yellow Sweet Clover

DEAR MISS WILSON:—You ask me in regard to my practise of watering bees. I certainly do warm the water for them in early spring, when what they would naturally find is icy. I winter my bees on the summer stands, and brood-rearing goes on very early. I have opened hives in January to see what was doing, and found brood in all examined.

Of late years I use a stoneware invertible poultry-fountain, gallon size, for the early watering. The water I put into this each morning is *quite hot*. What runs out, of course, cools so that it will not burn. The dome of the fountain stays warm for a long time, making a comfortable alighting place. I put little sticks in the saucer, so that bees do not drown.

Later in the season I use, in addition to the fountain, a large jar of salted water, with a float bored full of auger-holes. More than one of these floats are needed, as they get water-logged. To use sticks of fire-wood, *a la* Dr. Miller, would be all right if one had them. Fire-wood is a scarce article here. What would you think of *corn-cobs* for summer fuel?

Right now my bees are enjoying a good heartsease honey-flow. They are busy—"said Gilpin, '*So am I!*'"

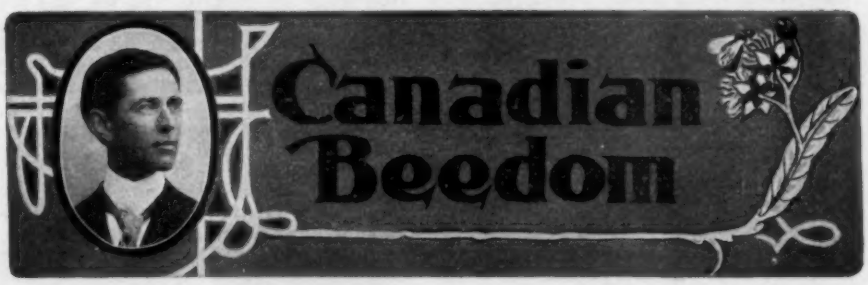
(MRS.) A. L. AMOS.

Comstock, Nebr., Aug. 24.

P.S.—I am sending you a few seeds of the yellow sweet clover, thinking, perhaps, you or Dr. Miller might care to experiment with it. He told an inquirer lately about its being *2 weeks* earlier than the white kind. It is *4* "in this locality." A. L. A.

Sticks of fire-wood for watering bees are now out of date here. Cork-chips have been used the past summer with immense satisfaction, covering the entire surface, and never becoming water-logged. I am sure you would like them.

Thanks for the seed of yellow sweet clover. It is quite possible that it may be 4 weeks earlier here. We have never had it, and never thought we cared for it; but this year we have changed our minds, for white clover has failed utterly to yield, and the yellow sweet clover might have been more obliging.



Conducted by MORLEY PETTIT, Villa Nova, Ont.

Repressing the Swarming Impulse by Changing the Brood

On page 753, Mr. Hasty says: "W. T. Brite's idea that young larvæ on the *outside* of the brood-nest are more repressive of the swarming impulse than when in the center, may have something in it. More nurses have a chance to take a hand." That point is well taken. But there is another forceful factor in the matter. It gives more room for the queen, and relieves the congested condition of the center, by distributing the nurse-bees to the outside of the brood-nest.

Another thing: This new condition of the brood-nest has a healthy influence upon the super, or supers. First, by the distributed condition of the bees, and, second, by forcing the honey above. I have mislaid Mr. Brite's article, and maybe he has covered the same ground. S. T. PETTIT.

A Discouraging Report

My report is as follows: About 300 pounds of fair extracted honey, 15 swarms, a lot of missing queens this month, and a large crop of new experiences throughout the season. I will have to feed about 200 pounds of sugar.

Palermo, Ont., Aug. 17. H. A. SMITH.

Mr. Smith, it will be remembered, had serious experience with bee-paralysis.

Fall Feeding of Bees

The time for fall feeding is right here, and a little bit of personal experience might be in order.

For years we extracted from supers when there was considerable brood in the brood-chamber, and not sufficient honey for winter. A little later, when the brood was mostly hatched out, the colonies were weighed and fed, on the average, about 20 pounds of sugar syrup. This involved a great deal of work, and danger of robbing. The extra honey had to be marketed, and the sugar bought, and when made into syrup and fed, the gain in weight to each hive was not more than the weight of the dry sugar used in making the syrup. There was also the suspicion caused by the feeding of sugar to bees, even though the reason was ever so carefully explained.

Recently I have done away with all this. At the time of extracting and removing supers each hive is weighed, and combs of sealed honey put down in the place of lighter combs, which are taken out and extracted. Ample allowance has to be made for brood, which weighs as much as honey, yet will not answer for winter stores. Allowance must also be made for the eggs which will hatch and the unsealed brood which will consume quite a quantity of honey before it is matured. After all brood is hatched and the colony is clustered for winter, there should

(Continued on page 850)

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Wide-Frame Super Vs. T-Super Once More

BY F. GREINER

On pages 641 and 642, Dr. Miller gives his reasons for preferring the T-super to others. The principal one is that a T-super is more compact, and brings the sections closer to the brood than any other contrivance. The other reason he gives, that of taking the filled boxes out *en masse*, I consider of no importance. Perhaps Dr. Miller has not used a good wide-frame super from which the sections may be removed in less time than from a T-super. Many a bee-keeper has been surprised at the ease and the speediness with which the filled sections come out of my wide frames, and the frames out of the super when handled by one accustomed to the work. But any super which admits an easy removal of the filled sections can not meet with objections on these grounds, and for the sake of the argument I will admit that the T-super is the equal of other supers in this respect.

Let us return now to Dr. Miller's first-given reason of the super being more compact and bringing the sections closer to the brood. Let us examine into the merits of this case.

What is the experience of other bee-keepers? James Heddon invented the break-joint honey-board to be placed between brood and sections; he advocates its use, and W. Z. Hutchinson, as well as others, are in favor of its use. Evidently they have not discovered the disadvantage of thus increasing the distance between the brood-chamber and honey receptacle. If there was a marked advantage in bringing the sections as close to the brood as the T-super does, these men of experience would have seen it. As keen an observer as Doolittle, continues to use the wide-frame super, which increases the distance between brood-frames and sections by ¼, or possibly 5-16, inch against that of the T-super; he has not discovered it to be a drawback. Many bee-keepers even use a queen-excluding metal sheet between brood and section super. Theoretically, can anything be invented to hinder the bees and to take possession of a super, worse than that? Can there be anything more disgusting put on the inside of a hive than that? Still, bee-keepers continue to use these instruments of torture without finding a serious drawback therein.

In 1886, I saw the first T-super during a trip through Virginia. The cheapness and simplicity of it, as well as this very fact, that by the use of it, sections were brought very close to the brood, induced me to fit up an apiary in the Shenandoah Valley with such T-supers. After using them for 2 years I was glad enough to sell them at a song. About 10 years later, being persuaded by my friend, E. H. Perry, I gave them another trial, building some 50 or 60 of such. I have used them ever since, more or less, and have now discarded them.

The advantage of the T-super, being in closer touch with the brood-chamber, I find is imaginary. When supers are stacked up, then, of course, a pile of T's is a little lower by ⅛ inch per super as against wide frame supers, or by 5-16 inch as against other styles. I consider this difference so insignificant as to be all out of proportion to the advantages the other supers possess. Before speaking of these advantages of other supers, especially of the wide-frame super, allow me to repeat again wherein the T-super has greatly troubled me:

1. "With the amount of propolis gathered here, it is often an impossibility to remove the filled boxes from the surrounding case without injury to the honey." A T-super might be so constructed as to remove this difficulty by keying up the sections on all four sides, if otherwise there were merit enough in the contrivance; but as there are other bad features enough to condemn it, I would not want to go to all that trouble.

2. "It is my experience that sections do not fold square." Sometimes only a part in a crate are faulty in this respect. Sometimes the whole lot is so bad, some folding diamond shape, that when placed in a T-super one corner of each section bobs up. There seems to be no way to keep it down. The springs at the side of the super do not exert pressure enough to hold it in place when pushed down. A wedge does not do it. A screw, or, rather, 5 screws to each super, where 4 sections are in a row, might do it. I don't know. These naughty sections give me no trouble with my wide-frame supers.

3. A most serious drawback to the T-super lies in the fact that it must be handled very carefully before having been on the hives. It can not be set down anywhere in the apiary like other supers, or it becomes disarranged. Nothing has tried my patience more than this bad feature of the T. Being accustomed to drop my wide-frame supers anywhere on the ground when at work among the bees, I have had many an accident happen of this kind with the T's. It requires a lot of time to get a T-super back in shape. The sections have a way of catching on the tins at the bottom, and no way of getting at them easily; the wooden strips between the tops of sections require a world of patience to replace when hurrying the work. Well, in brief, deliver me from the T's.

4. An illustration I gave some time ago shows how badly sections become soiled here when not protected by a full wide frame, and I need scarcely say any more on this point. However, it is claimed by Dr. Miller, that the bees have a naughty way of crowding in propolis between the top-bars and tops of sections, which fact can not be denied. The bees here are as guilty of this as are the bees in Illinois. When sections are taken out of wide frames they often are encumbered with little ridges of the sticky or brittle substance—according to the season of the year and the temperature—along their edges, particularly on the tops. The question now arises, which is more difficult, to remove these ridges, or to clean, scrape and sandpaper both top and bottom of each honey-box? Any one need not be familiar with this work, but he can tell at a glance, that 10 sections from a wide-frame super can be made presentable in less time than one can out of a T-super here in New York State. The matter must be different in Illinois, or as good and fair-minded a man as Dr. Miller could not possibly defend the T-super. Why, this feature alone is sufficient to decide the matter in favor of wide frames.

With the above we have now come to the advantages of the wide-frame super. In the first place I repeat, the frame protects the section; not only keeps it clean, but also keeps it in shape. The sagging of the bottom-bars, which sometimes occurs, is of little moment, and with a 5-16-inch bottom-bar would be insignificant. It could be wholly prevented by using the sections crosswise of the hive, placing but 3 sections into each frame. I imagine Mr. Doolittle uses them in this fashion. In the Betsinger super, each wide frame has a follower and tightening screw at the end, thus making everything most rigid. This tightening screw has the other advantage of counteracting inaccuracy of workmanship. I find sections vary in size. Even when bought of the same manufacturers each year, the output of one year is not exactly like that of the next. One year the sections may just fill the frame to a nicety; another year they go in loosely. In this last case, bottom-bars are more apt to sag than when the 4 sections are a perfect fit. Two years ago I bought sections, and found they measured 1-16 inch more to the 4 than they should have done. They were standard goods, 4x5x1⅛. I had a lot of trouble with them. The follower and tightening screw would have saved me a world of trouble and vexation. In speaking of these little imperfections of sections, I do not mean to find serious fault with the manufacturers. I am not sure but what it is a practical impossibility to make one-piece sections so exact that 4 sections placed side and side measure 16 inches to a hair; I only mention this to show what the conditions are under which we labor, and how we can best remedy existing evils.

Returning now to the wide-frame super, I wish to add that it is a most convenient fixture in the shop as well as in the yard. One can hardly disarrange it, and if, by chance, it should have become so, order is very easily restored.

In a poor season, when bees need but one super per hive, a little more room can easily be given by removing 4, 8, or 12 sections from a super *while on the hive*, and replacing with that many empty ones. The advantage is, the sections are handled in 4's, and can be handled very roughly and quickly. It is a practical impossibility to remove full

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sections from a T-super while on the hive. With the wide-frame super it is easier than to remove a frame from the brood-chamber.

Dr. Miller often mentions his "go-backs." It is very fussy work with the T, to fix up a super full of these, but it is very easy and simple with my super. Usually, if any sections in a super are unfinished, they are found in the outside row. In a moment these 4 are lifted out of one super and returned to another. It may be done before the honey goes to the honey-house, or before it is brought home from the out-yard, or it may not be done till all is brought in, *ad libitum*.

The wide-frame super has all the advantages of the T-super, and few, if any, of its disadvantages.

I believe the wide frame originated with A. I. Root, and was used in the double-tier. A double-tier super is, for many reasons, undesirable, and all bee-keepers at the present day use any of the supers in single-tier.

It is needless to say that I am not interested in the sale of wide-frame supers, for, like the T-super, they are not offered for sale anywhere, to my knowledge.

Naples, N. Y.

The Object of the Honey-Bee's Creation

BY GRANT STANLEY

I have read and re-read G. M. Doolittle's article, on page 635, on "The Relation of Insects and Flowers," wherein he says, "I understand that the first purpose for which the honey-bee was created was for the fertilization of the flowers." I can not agree with Mr. Doolittle on this point, and hope to show that the honey-bee was created for the very purpose in which it is engaged to-day—the gathering of honey for the benefit of mankind—and that the question of fertilization of the blossom was of a secondary nature.

The fact that the honey-bee is a great aid in the fertilization of certain plants at the present time, does not prove that such has been the case throughout all ages of the world. Is it not true that the blossom requiring the agency of the honey-bee for its fertilization at present is in most cases that which has been propagated or improved by man? That this is true of the various fruits and clovers very few will deny. They have been crossed and re-crossed for the purpose of improvement, and to produce new varieties, which necessarily requires pollen from other plants of the same kind to make the crosses effective. The further away we get from the original, the more this becomes necessary. We have some kinds of strawberries that require no outside agency to fertilize them, as this feature is present within their own power.

This is not a feature, either, that has been brought about by man, but one that has been with it from its very existence, that it need not "nod its head to the breezes" in quest of the honey-bee for fertilization—a feature that can be traced back to most remote ages. In this very respect you will find, upon close investigation, that away back in the days of the patriarchs, when plants of every description grew wild, and dotted hills and forests everywhere, these plants needed not to depend upon the honey-bee for their fertilization; but since man has become such an active agent in improving and bringing out new varieties of every description, it is evident that some agent to cross-pollinate these flowers effectively, has become apparent for this reason, that we have gotten so far from the original that it makes it imperative, else the species would soon die out entirely.

This is not the first instance of this nature where wonderful results have been achieved along particular lines at the expense of great weakness in others. That there are continual changes going on in all plants, either by the assistance of man or otherwise, no one will dispute, and Darwin tells us, in his "Origin of Species," that the blossom of the apple at the beginning was green, and from the constant change it has undergone, we have the beautiful blossom we see to-day. I am not ready to believe this, however, for the reason if so much change has taken place in the blossom, the leaves remain green throughout all these centuries, or has this change of blossom been brought about in order that the bees be attracted to them to pollinate the bloom in order to save the species?

But from the above it will be seen that from these continual changes the time has arrived, and it will be more so in the future, when the honey-bee plays a strong part in the fertilization of many blossoms, but it has not been true throughout all the ages of the world.

Now let us look at the question as regards man. Ask the men who are making a speciality of bee-keeping to-day, if they think such a wonderful little creature as the honey-bee capable of doing so much, would be created for such a minor object as that of the fertilization of blossoms. We are told that milk and honey were the chief dainties of the most remote ages, and butter and honey are also mentioned among articles of food. The Bible has many references to honey, and speaks of it in very strong terms, and we find, as far back as Moses, it speaks of the "land of milk and honey," which would indicate that honey had been a staple article in a very early age of the world, and not a matter of secondary importance, as Mr. Doolittle would have us believe.

Now, like Mr. Doolittle, I am no botanist, but I view this question in just about the opposite from him, and what I have written above has been for "leaving down the bars" and have the opinion of others, and, in the meantime, show that the honey-bee was created, and has been improved, for the very purpose I mention—the gathering of honey for the benefit of mankind.

Nisbet, Pa.

Wintering Bees—Other Recent Subjects

BY ADRIAN GETAZ

A three cornered discussion, on how to keep bees warm during the winter, has been going on lately in Gleanings. The principal fact is that the bees, like all the other animals, eat to keep warm. The honey eaten is, so to speak, burnt during the digestion, and the "combustion" produces the necessary heat. So the colder the surrounding air, the more the bees have to eat to keep up the necessary temperature of their bodies.

A single bee can not eat enough to stand anything like real cold, because her whole body is exposed to the cold. But if a number are clustered, they can stand quite a low temperature, because only the outside bees are exposed, and partially at that. This is not strictly correct, however. A cluster of bees is not air-tight, and therefore the warm air inside must escape more or less at the upper part, and be replaced by cold air entering from below.

The larger the cluster of bees, the easier it is for them to keep warm. There is far less surface exposed in proportion. A cluster four times as large (in volume) has only twice the surface exposed. Then the heat from the interior having more space to travel to reach the outside, is thereby considerably retarded, and the loss decreased in proportion.

It might be asked here, What is the use of having a hive if the heat is confined to the cluster? That is, except to protect the bees against the rain and the wind, and furnish them a place for their comb and honey?

Well, there is; and I think a comparison will explain better than a theory. Suppose a house with thin walls of clapboards and ceiling, badly jointed, the doors and windows carelessly fitted, and perhaps some glass broken. Let come a real, cold blizzard, and you might keep the stove red hot the whole time, and the room would not be much warmer than the outside world. But take a good, well-built brick house, with double windows, and everything tight, and a comparatively small fire will keep the room comfortably warm.

Now that is an exact parallel of the hive and bees. The cluster of bees eating honey is the counterpart of the stove burning coal, and the two houses correspond to badly and well protected hives.

Temperature of the Cluster.

The temperature of the cluster, and, in general, of the hive, was first investigated in the early part of the last century by Newport, in England, and Dubost, in France. The temperature necessary for the brood is about 89 or 90 degrees. It may vary from 82 to 95 degrees, but outside of these limits the brood seems to suffer. During a dearth of honey in summer, when the bees cease to rear brood, they are not so particular, and do not always keep the temperature so high. In winter the temperature of the cluster may vary greatly, but even the outside of the cluster never falls below 68 or 70 degrees. The inside of the hive, outside of the cluster, is always warmer than the outside of the hive,

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but the difference varies greatly. Dubost also observed that the center of the cluster is often warmer in very cold weather than in more moderate temperature. This could be expected. Referring to our comparison of a room and a stove, the colder the weather the hotter the stove must be. The temperature of individual bees on the wing is given by Maurice Girard at 9 to 13 degrees above the surrounding air. The temperature of the thorax is always higher than that of the abdomen.

Doolittle's observations, given in some of the back numbers of this paper, do not exactly agree with the above. But the conditions were very likely not the same. The winters of France and England are considerably milder than those of New York. And not only milder, but more uniform, the temperature varying but little from day to day. The style of hives, and size of the colonies, should be taken into consideration. The method of observations was not the same. Dubost had several thermometers inserted in the hive, the stems coming out at the top. Glass on the sides of the hives enabled him to see the position of the bees relatively to that of the thermometers. Doolittle, as stated in his writings, used a maximum and minimum thermometer.

I accidentally found the following from Dr. Miller, in the American Bee Journal for April 28, 1898, page 266:

"The bee is a warm-blooded insect. According to some the temperature of a bee's body under normal conditions is 81.5 degrees; according to others, 95 degrees. Some bees that were torpid in a temperature of 48 degrees, but brought back to life in a temperature of 59 degrees, showed a body temperature of 77 degrees. The cluster in winter is kept up to 50 to 53 degrees at its outer part. When the surrounding atmosphere goes down to zero, or lower, the bees in the center of the cluster run the heat up to 86 degrees or more, by means of eating and exercising. This increased heat in the center of the cluster is necessary, so that the outer part of the cluster may not go below 50 degrees, and explains how it is that breeding is commenced in colonies out-of-doors, but not in cellared colonies. The center of the cluster in the cellar is too cold for breeding, for it doesn't need to be heated to keep the outer bees warm enough."

Mr. Devauchelle gives a description of the position of the bees in the cluster during the winter. In the colonies examined, the cluster was entirely on the part of the combs that was empty of honey. In each cell was a bee, her head turned toward the bottom of the cell, except, however, near the center where a little brood was found. Between the combs the bees are loosely grouped except at the outside of the cluster, where they form a compact covering. Each bee has her head and thorax under the abdomen of the one above her, the abdomen turned outside. At the top their position is nearly horizontal, and more and more inclined in going toward the bottom. The colonies examined—4 in number—were in double hives. In each one the cluster was found in the corner, between the front wall and the partition. The outside of the cluster, that is, the part not against the wall and partition, was about the shape of a sphere cut in 4. The examination was made on Dec. 26, by an outside temperature about the freezing point.

In another examination, made in October, he found a little honey in the bottom of some of the cells inside the cluster near the center. Whether these cells were also occupied by bees he could not tell, because, the weather being warmer, the bees got out of the cells too quick to observe very closely. The full account of it is in the Apiculteur for October, 1904, page 400.

In connection with the form of the cluster, I might here give the description of a swarm hanging under a limb and working in the open air, as found in Mr. DeLayens' works on bee-keeping. The shape of the cluster was about as usual, and remained so. The outside bees were placed as described above, shingle-like fashion, abdomens turned out, very close together. At the bottom an opening is left by which the worker bees go in and out. The outside bees make a rain-proof cover. Inside, the bees are loosely placed. A comb is commenced. When it is the size of a man's hand, two more are started, one on each side. As the bees increase in number, the cluster enlarges and the combs are extended, and more added. The shape remains the same.

Pollen.

In a recent communication, Mr. Doolittle made a remark which I consider of the highest importance. He says that in the spring of the year, whenever a spell of bad weather occurs and lasts several days, brood-rearing ceases completely, or nearly so, even when the colony has plenty of honey available. He adds that the cause of it is a lack of pollen. We all know what a large amount of honey is consumed during the height of brood-rearing, and there is no doubt that a correspondingly large amount of pollen is also required. What is left in the hive since the preceding fall can not go very far.

Giving flour outside is a very poor help, as the bad weather will interfere with its taking up, as well as with the gathering of pollen. Another inconvenience is that the bees, when they know where the flour is, will come after it when the weather is not quite warm enough, get chilled, and are lost.

A large number of them are lost every spring by going after water when the weather is too cold. If some kind of arrangement could be devised by which the bees could be fed the flour and water needed during the early spring, inside of the hive, and without having to open it, it would be a considerable saving of bees, and an equally valuable increase of early brood.

Very likely many unlucky queens have been decapitated on account of unprolificness, when the trouble was a lack of pollen or some other adverse conditions.

B. Taylor was in the habit of replacing, every year, those of his queens that were defective in some way or other. One year, a quite inferior queen was not replaced; the following year that queen proved to be one of the best in the apiary.

Apicultural Associations.

Some questions have recently arisen among the bee-keeping fraternity about the best way to manage bee-keepers' associations. One point raised is whether the honey dealers and supply dealers should be admitted or not. The European associations do not admit them. I think that is right. The interest of the bee-keeper is to sell his honey as high as possible. The interest of the honey dealer is to buy as cheap as possible. The interest of the supply dealer is to sell the supplies as high as possible; that of the bee-keeper to buy as cheap as possible. An association of clashing interests is an anomaly, and a failure. Just think of the United Miners' Union admitting Baer, Cassatt and other coal and railroad magnates in their union, and electing them to the highest offices!

My ideas are those of the European bee-keepers, each association covering only a moderate territory, having as nearly as possible the same markets, the same conditions—in a word, as many points in common as possible, close enough together to see each other often, and having to go only a reasonable distance to attend the meetings.

If the honey dealers and supply dealers should be excluded from the local associations, I think they should be admitted in the National. That seems contradictory, but it is not. If there are conflicting interests, there are also common interests. Supply and honey dealers' prosperity depends, after all, upon ours. There are a great many questions that require numbers and influence, such as transportation, railroad rates, legislation on bee-keeping, legislation against adulteration, experiments on bee-keeping, subsidies from the States for Apicultural Divisions in the Agricultural Stations, etc. All these, to be prosecuted successfully, require numbers, money, and influence. And for such the co-operation of dealers, supply manufacturers, bee-paper editors, etc., is exceedingly valuable.

Knoxville, Tenn.

How Conscientious D. Catches the Queen

BY BARON M. LIKAWFUL

It has been a long time, my children, since I have written to you, the last time being the occasion I had of writing about the pupa-skinna-castoffica of the embryo queen, and of my 3-year-old worker-bees. The truth is that I have been so busy of late years caring for the progeny of that wonderful queen into whose bowels, through the wonderful agency of the pupa-skinna-castoffica (umbilical cord), I had injected the lives of 499 sister virgins, that I have had little time for writing.

But now that my grand old queen is dead, and all my efforts towards replacing her have failed, I have thought that my only easy way out of the loss was to practise the bee-keeping of Mr. Conscientious D. Like the rest of you I was puzzled to know why he should keep the secret from us,

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and though I did not care to know all about his methods, I did secretly long to know how he could in less than 4 minutes prepare a colony so that it would not swarm. After reading his article (see page 185), like all the rest of you, my children, I wondered what sort of bee had got into Brother Conscientious's bonnet. Really, I felt a little wrought up, and if Conscientious were my truly brother I should tell him strongly how I felt. I might even wish to throw some rotten drone-brood at him. But I solved his mean old problem, and it is for that reason that I am again rattling my typewriter to let you know about it.

At first I thought to think out the answer, but you know very well that your old uncle much prefers to get things physically rather than mentally, and that he enjoys an adventure. So I 'phoned for Yon's flying-machine and went post-haste to that far-away town in Minnesota. Did you ever travel in a flying-machine? No? Well, you will easily understand that that mode of travel offers little opportunity for inquiring the way. The matter of fixing the guide-posts has not yet been satisfactorily solved. Thus I was rather puzzled to know when I got there, or, rather, was getting there. But, wonder of wonders! You doubtless have observed that a man and a woman who have lived as husband and wife for two score years have come to look like each other. My children, Conscientious has imparted his very spirit to the region round about that town in Southern Minn. As I was spinning through the air I suddenly noted that the trees were taking on a different aspect, that their leaves hung more modestly, that the very grass waved less vigorously, that the birds sang more quietly, and that the very mosquitoes bit me only on the forehead. Soon a most modest town appeared, and on the outskirts there were to be seen numerous hives of bees. In their midst stood a man who wore a black tie and gloves. It was none other than Conscientious D.

As luck would have it, my anchor was skimming along just right to pick up Brother Conscientious as he was stooping to insert something into a hole in the hive. Fearing to injure the man I directed the machine up a little so that he cleared the ground, and hung safely above all obstructions. Then it was that I hit upon a bold scheme. Though he said he would rather die than to tell his methods to the American Bee Journal, he did promise to tell me if I would never divulge the secret. Of course I promised, for you know that I have an easy conscience.

So I hauled Conscientious up and got his secret. Later we descended, and I saw him go through the whole show. As he says himself, he does not expect anyone to believe his statements, and so I do not expect you to believe what I am about to divulge. Yes, I did promise, but if you expect me to keep that promise you can go and talk with Conscientious D.

Of all the schemes! I have to laugh every time I do the trick. The way Old Conscientious has played upon feminine weakness and thereby gained for himself, and imparted to me (and through *me* to you), a mastery of bee-keeping, beats all. True blue, I actually forgave the old chap when I learned the trick, nor could I blame him for wishing to keep it secret.

"You see, Baron," says Conscientious to me, "the female nature is subject to two marked peculiarities. It has a weakness for sweet scents and for mirrors. I reasoned that to hold the queen in the hive, and thus keep the bees from swarming, I must control the queen in some way. After many trials I have what you see here."

He held up a small thimble-like affair with a mirror in the bottom; also a small vial marked, "Queen Essence." He stated that in the vial was a decoction obtained by steeping the antennæ of drones (better, he says, the third joints of the antennæ) in clover-blossom tea. Going to a hive he turned a button and revealed a small hole into which he inserted the mirror-thimble. Then with a small brush he anointed the edges of the hole with the essence.

"There," says Mr. C. D., "that colony will not swarm till doomsday. The old queen will be looking into that mirror, to which she will be attracted by the essence, half the time. Even the bees will leave the swarming-fever upon seeing their mother become such a home-lover. If I leave the thimble in 2 weeks there will be a young queen hatched. She, prevented from going to the mirror herself through the jealousy of her mother, will become mated. Thus, through this wonderful little device, a colony is easily requeened. Every hive has, as you observe, the hole into which I can in 2 minutes insert and anoint the thimble."

Well, children, I did not believe it. I went home and tried it, and then was forced to believe. Were I conscientious I should never tell you the secret, for the knowledge of it will upset the bee-keeping world. A colony thus treated will hustle in the honey all summer long, never offering to swarm, and not sulking at all. It is wonderful. I find it hard to believe, and I fully appreciate the tax which Conscientious D. never put upon your credulity, but which I now lay where you wish it.

So, good night, my children.

NATIONAL AT CHICAGO

Report of the 36th Annual Convention of the National Bee-Keepers' Association, held in Chicago, Ill., Dec. 19, 20 and 21, 1905

[Continued from page 768.]

Mr. France, the General Manager, then read his paper on,

BUSINESS END OF BEE-KEEPING

Some people say the business end of the bee is its stinger, but for me it is the long tongue "that improves each shining hour, and gathers honey all the day, from every opening flower."

The business end of bee-keeping means modern, systematic methods, familiar with and experienced in the best methods of handling bees. The rearing, introducing and shipping of queen-bees, controlling of swarming, producing the best quality and greatest quantity of honey per colony his locality can produce; the preparing of honey for market, and getting, in cash, what it is worth, instead of letting other people set the price and time to pay for it. The business end requires the bee-keeper to know what his locality is able to produce at different dates, also when to have his colonies in the best possible shape to get it. If for comb honey, all the sections with thin starters in, in supers, ready to put on the hives; or, if for extracted honey, an abundance of clean, straight worker-combs, all interchangeable. Not later than the close of a honey harvest to plan for the next. Early in the fall to have the bees ready for a hard winter. He has examined the several honey-producing plants of his locality with prospects for next harvest; has decided how many of his best swarms he desires to rear queen-bees from, which ones to rear drones for each apiary; how many swarms for comb honey, and how much extracted honey he wants. In the fall, as soon as the honey is sold, with the cash in hand, he takes advantage of low price of supplies, buying what he cannot afford to make. Then all winter he is getting all his hives made up and painted, brood-frames made and wired; sections with starters in supers ready; shipping-cases and storage for extracted honey in such packages as his market demands.

When you find a bee-keeper as carefully attending to his bee-keeping business as the successful merchant or other business man attends to his business, you will likely find hives all of one size, upper stories, frames or supers are a perfect fit anywhere. Hives painted and set in some regular order in the apiary so as to help the bee-keeper at work. He will have strong colonies at the beginning of the honey harvest, swarming under control, and the bees busy gathering honey. No hives with big clusters of bees loafing on the outside of the hive or going to the woods. In my State, while inspecting apiaries, often I do not find all of the above, nor the business end of bee-keeping. Sometimes hives shaded with the tall grass never cut, unpainted hives with crooked, old black comb, half of it drone-comb; bees swarming and

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going where they please—in short, the bees take care of themselves. This class of bee-keepers seldom have any fancy honey, but such as it is, goes to town to break down prices, which hurts both the producer and market for others.

If a bee-keeper has but a few colonies and handles his bees alone, he should have a method, business-like, so as easily to keep ahead of the work of the bees; or if operating several apiaries, and has some hired help, a small part of the year, each hired hand has his respective duties and is held responsible, so everything goes like clockwork.

When the honey harvest is over, the business end of bee-keeping requires the bee-keeper to know about what the honey crop of the United States is, what dealers are paying, and what in cash he should get for the different grades of his honey. I fear some of us have only partly finished our bee-keeping education. We have partly learned how to get all the honey our locality produces. We get some nice comb honey, but have by far too many unfinished sections, too many sections that will not case up well, too many grades and a poor market. Are we not to blame? The merchant spends much time and money to get trade, in advertising, displaying goods. Yes, each clerk must undergo a training of neatness, pleasant ways to await on customers. By his business methods he knows the daily markets, when and where to buy as well as to whom to sell goods on credit.

N. E. FRANCE

Then let us spend another hour studying how the manufacturer or professional man succeeds. All by strict business principles enforced. Can we not take a lesson?

When I go into honey commission houses and see the untidy, dirty cases of broken comb honey, several grades in the same case, thick and thin combs together, fancy combs in front of a case of poor honey, leaky packages of extracted honey, I wonder the commission dealer gets as good prices as he does. Who is to blame? Large bakeries now buy honey in car-lots at prices the average or smaller bee-keeper can not afford to sell at. He must sell to consumers, in such packages as such market demands. For my home market I find the 2, 3, 5, and 10 pound syrup or friction-top cans nicely labeled, the same as all canned shelf-goods, sell best. For farmer trade and shipping market, the 5 gallon flat-top, jacketed can with 3-inch screw cap, and bail handle, costing 35 cents each to any National member. Honey in this package goes over all railroads west of Chicago as fourth-class freight, billed "Honey in cans entirely encased in wood." I have no trouble to sell tons of honey in this package. Only in my home market, I sell liquid honey in winter, unless to some one who is a traveling salesman for me, going from city to city, and he has no place to liquify honey. For such customers, I remove the can from the wood jacket, set the can in hot water a little while, until the honey is liquified, then return the jacket and ship. This winter I have two such salesmen, one selling from 4 to 15 of those cans in each town. My home market (city of 3,500 inhabitants) uses at least 10,000 pounds of extracted honey and 500 pounds of comb honey each year, no one selling from house to house, but in every store in town where groceries, meat or provisions are sold, is the above-size labeled honey-cans; prices in each store, all alike, and marked on each package by me. Customers pays same anywhere, my house or town.

If I buy goods of my dealer he makes a profit on his goods in exchange, or if I draw cash for honey, I allow him 10 percent commission. Tons of my honey are sold this way in several cities. Why can't others do likewise?

To-day I called on a Wisconsin bee-keeper using business principles (by the way, he is here in the room). This year he got a pretty good harvest of 7,000 pounds fancy comb and 8,000 pounds of extracted honey, while his neighbor bee-keepers got less than half as much per colony. He also got a much higher price for his honey than his neighbors, who loaded in the same car; all cash at car. He uses fence separators, No. 1 plain sections, and extra-thin foundation; all hives leveled on stands, everything kept clean and tidy, while those other parties say "no use of all this." Remember, he got *twice* as much per pound as some of those parties. A few winters ago this same man was to read a paper at our State bee-keepers' convention in February, but when the date came, with the thermometer indicating 30 below zero, he wrote me his bee-cellar had cooled down *2 degrees,* and he must not leave his bees.

While at his house to-day he told me many neighbor bee-keepers were judging the amount of winter stores by lifting the hives. On examination, he found they were fooled, as many combs were heavy with bee-bread instead of honey. Excuse me for being personal in illustrations, but it is these *little* business ends of bee-keeping that pay. Let us think about such things, and in the future keep a better account of all expenses and sales so that at any time we can tell the number of colonies of bees, pounds of honey produced and sold, to whom sold, what kind of advertising paid us best, etc. Let us attend more bee-keeping conventions, read more carefully the bee-papers and bee-books, ever remembering this great land we call ours, is large enough for us all. With charity for all, and honest hearts, using the business end of bee-keeping, we continue in the sweetest occupation of our republic—bee-keeping for pleasure and profit.

N. E. FRANCE.

Mr. Moore—I would like Mr. France to state the style, net weight, and prices of the packages he gets for his honey for local trade.

Mr. France—I would rather use a 10-pound pail, as it is a little less work; but in spite of all I can do to try to crowd the larger package, students, who are largely consumers, buy the smaller packages, so that the 3 and 5 pound tins get rid of the larger portion of the honey. I have the 1, 2, 3, 5, and 10 pounds in the grocery stores. The 3's and 5's are the ones we have to renew. My price has been 8 cents a pound net for the honey, and then add the cost of the can to that, with no cans returned.

Mr. Hershiser—The cost of putting up the smaller packages is greater.

Mr. France—Yes, but having some hired help, when we have rainy days, they say, "Mr. France has a lot of work for us down at the bee-house, there is no play to-day;" so that the cost that way is not very much.

Mr. Hershiser—I put up a larger quantity in jelly glasses and I am able to net 13 cents a pound for them. I presume I have put up about 14,000 of the packages; and the honey I sell as low as 8 cents is put up in the wholesale package.

Mr. Holekamp—How do you keep these packages from leaking?

Mr. Hershiser—I cut a little cap out of paraffin paper just a little larger than the top of the jelly glass. Then force the tin-top of the jelly glass down over that, and it practically seals it, and it doesn't leak.

Mr. Bartz—As to the tin honey-package, isn't it stated in the bee-papers that tin is detrimental to honey? If this is so, I should like to have it stated here.

Pres. Dadant—That is so if the tin is made of lead. I have had as large experience as anybody in keeping honey in tin, and we have kept it for years. When it is cut, and the

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iron is shown, it rusts and darkens the honey. But with good tin after 5 years the honey will come out just as bright as the first day.

On motion of Dr. Miller the convention adjourned.

The President called on Mr. H. M. Arnd to read a paper entitled,

SUCCESSFUL EXPERIENCE IN THE MAKING OF HONEY-VINEGAR

As an introduction to this paper on successful vinegar-making, I wish to say that if it is of any value to the bee-keepers at large, a part of the thanks is due to George W. York, although he personally did none of the experimenting. He and I, under the firm name of "The York Honey Co.," expended hundreds of dollars on my instruction, experiments, and the manufacture of honey-vinegar.

Vinegar is produced by the action of oxygen on alcoholic fluids, under the influence of ferments of which the active constituent is acetic acid.

Honey-vinegar is usually made by the old, long process, which takes about one year; but it can also be made in about 5 weeks, by the quick process by means of generators. In either process, honey-water must ferment, to produce alcoholic fluid, which can be converted into vinegar only by powerful oxidizing agents.

I will speak briefly on the old way, as it is familiar to most of you. You can utilize the washings of honey-cappings, the rinsing of cans, barrels, or waste honey in any form, for the sweetened water. This is put into barrels, with one head out, the wider the barrel the better, as the more air-space the better chance the bacteria have to work, as they need air. You can hasten the fermentation by adding yeast or by acetic-acid bacteria, commonly called "mother of vinegar," and let it go through about the same process as you would for cider-vinegar. Always keep it in a warm place, and covered with a thin cloth to exclude the dust. In about a year the alcohol will be almost worked out, and the oxidation will stop. You will then have honey-vinegar, of grain strength in comparison with the strength of the sweetened water. It is then ready to be barreled and put into the cellar for future use.

The quick process, with which I am more familiar, is one that is hard to explain, on account of the many details and chemical changes that one must understand in order to use the process successfully.

To be a first-class, practical vinegar-maker, one should be somewhat of a chemist. My ability as a chemist being very limited, I will try to tell you in plain terms how The York Honey Co. proceeded.

What first induced us to make honey vinegar was to utilize all waste honey, such as inferior honey, the washings of barrels, tanks and empty cans—in fact, all honey that would otherwise be wasted in the warerooms of an up-to-date bottler and dealer in honey.

In the first place, I took a course of instruction in vinegar-making, under a first-class instructor, standing at the head of my class, also at the foot, as I was the only pupil.

We secured two generators, casks for fermentation, a complete cooper's outfit; a saccharometer, a vinegar-tester—in short, everything necessary to carry on vinegar-making successfully.

A generator such as we used, is a large, open-top, round tank, carefully filled and packed with long, curly beechwood shavings, to within a foot of the top. On top of these shavings is a close-fitting, round distributing-board, filled with many small holes equal distances apart. There are several vent-holes about 18 inches from the bottom, and also a large faucet within a few inches of the bottom. There is a hole about 2 inches below the distributing-board, so the temperature in the generator can at all times be observed. In addition to this, there is a close-fitting cover on top of the tank to prevent the aldehyde from escaping too freely.

The fermenting casks are nothing more than large, open-top, wine-casks.

It takes about 50 pounds of honey to run a generator properly for 12 hours, so we decided to start only one. It takes 1½ pounds of honey to each gallon of water to make a 40-grain vinegar. The proper proportion can be had either by measure or by testing the mixture with a saccharometer.

Forty-grain vinegar means 4 percent of pure acetic acid in the vinegar, or 40 grains of acetic acid to every 1,000 grains of vinegar. Stock tested by the saccharometer, for every percent shown by this instrument you will get a 4 or 5 grain vinegar. It varies according to the completeness of the oxidation. Stock testing 10 percent should give at least a 40-grain.

Having everything in shape, we will proceed to turn the sweetest of sweets into vinegar.

To make stock, the fermenting tanks are nearly filled with water and honey, in the porportion of 1 gallon of water to 1½ pounds of honey. Add to this mixture a specially prepared malt yeast to start a rapid fermentation. (The temperature of the room should be at all times about 70 degrees.) In about a week this will be almost worked out, and fermentation nearly stopped. To hasten the oxidation, the shavings in the generator are soured with vinegar, so when the stock is poured in at the top it trickles over the soured shavings.

Charge the generator every 1½ hours with 6 gallons of stock, having all the vent holes open, and soon the oxidation will start.

The oxidation in a generator creates a damp heat, but it is as true a fire as there is in a stove, and if you keep a stove as a model, and think of the alcohol as your fuel, and the vents or air-holes as the dampers, you will not go far wrong.

Keep charging from the stock in the fermenting tanks every 90 minutes until the shavings are well saturated, and the fluid runs out of the faucet at the bottom. Then let it stand until the generator draws, and warms up. You can tell whether or not it is drawing by putting a candle in front of an air-hole; if it blows out, it shows that the temperature is greater outside than in the generator; if the light is stationary, it shows that the bacteria have begun to propagate and have raised the temperature equal to the outside, and in a few hours you will find that the light is drawn in. Then the oxidation is in full operation, and the temperature inside exceeds that outside. You must then begin to watch at the thermometer hole, near the top of the generator, and when the temperature gets above 85, charge with 6 gallons taken out of the bottom. If there is not that amount, add enough stock to make up the full 6 gallons. In about 2 hours examine the drafts and insert in the air-holes plugs having ¼-inch holes, to decrease the size of the air-holes.

H. M. ARND

During the day take 6 gallons from the bottom and put in the top every 90 minutes. If the charge is short of 6 gallons add enough stock to make up the shortage. Charge 12 gallons at night; and close the drafts; in short, "bank your fire" for the night.

The large vinegar-makers have automatic chargers, and keep it up all night.

Aldehyde is the intermediate composition between alcohol and vinegar; it is a very volatile liquid, and if you are not careful, it will nearly all escape. The weak alcohol is converted into aldehyde by the bacteria, before it becomes vinegar. If you give the generator too much draft, the aldehyde will be lost, so you can see the drafts are as important in a generator as in a stove.

The charging from bottom to top is continued until the vinegar does not gain any in strength; then every other time 6 gallons of vinegar are taken from the generator, and stored in casks for the market.

For every gallon you take from the generator an equal amount must be added at the top, from the stock.

The most profitable and best way is to run the generators in sets of 3, one above another. Start the stock

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the top of the generator, and by the time it trickles through the 3 generators. it comes out vinegar.

It is very essential that the generators should be correctly packed with shavings, kept perfectly level, and charged with greatest regularity, so that the stock will be equally and regularly distributed. One of the most important things is to keep it drawing, for if the fire gets low, the bacteria, after they have no more alcohol to work on, will turn around and destroy all the acidity in the generator; in the course of a few days putrefaction will set in, and the generator will be dead. It will then take weeks to restore it to its former condition.

Vinegar can also be made by the quick process, in small quantities, by using rolling vinegar generators.

The chemical changes in the manufacture of vinegar are alike in both processes, but in the quick method advantage is taken of the oxidizing action of the vinegar fungus. By vastly enlarging the surface of the liquid exposed to the air, at the proper temperature, we can reduce the time occupied from about one year to 4 or 5 weeks.

At the present price of honey, pure honey-vinegar can be manufactured on a large scale for about 15 cents per gallon, and perhaps cheaper. I have sold honey-vinegar for 40 cents per gallon.

If any present would like to convince themselves that vinegar made in so short a time is first-class I will gladly give them a small sample to take home to try. I am sure a trial will convince them that honey-vinegar, made in the way described, is not only good, but as good as the best.

H. M. Arnd.

Mr. Cummings—Mr. Arnd said in his paper to leave it a year in a barrel. I think that this can be aided a good deal by having the barrel swung, and every time you pass near the barrel, swing it and it mixes it. The air in that way gets in and it oxidizes it more rapidly.

Mr. Strong—I have an uncle in Ohio who, some 20 years ago invented what he called a vinegar generator. This one Mr. Arnd speaks of is what was then known as the shaving generator. My uncle got what he claimed to be an improvement on that. It was simply a series of shelves, raised one above the other, and the fluid was passed over them and exposed to the air. It dropped from one shelf to the other and was continually passing back and forth until it got to the bottom, when it was good vinegar. The strength of the vinegar would depend upon the height of your generator. If it was not long enough it would require passing through again, but the result was good, strong vinegar by the time it had passed through.

Mr. Arnd—That process had the same chemical action exactly. If you put it on shelves or a long trough, or anything else, it would be all the same.

Mr. Hintz—I have had some experience in making vinegar from honey, usually made from washings of the cappings, and I have never succeeded in making vinegar that was good and strong, and which gave good satisfaction to my customers until it was about 2 years old, and now I find vinegar at that age seems to be liked very well—so well that they return and get it a second and third time.

Mrs. Honaker—I believe vinegar made with pickles in small quantities will keep just as long as any other. We make it by putting sweetened water in 20-gallon jars and put a fine cheese cloth over that. We keep them in an upstairs room for about a year, and we have the best luck with it.

RIPENING EXTRACTED HONEY—DIFFERENCE IN QUEEN-CELLS.

"Should extracted honey be further ripened or evaporated by artificial heat?"

Mr. Hershiser—Let the honey stay in the hive until it is thoroughly ripened by the bees. Don't remove it until they get through with it. Only use artificial heat where bottling the honey.

Mr. Lathrop—I agree with Hershiser.

"Before shaking the bees to present swarming, how can a bee-keeper tell the difference between queen-cells, if built under the swarming impulse, or for superseding?"

Mr. Taylor—For superseding they are generally a small number and about the same age, while for swarming there is a considerable number of different ages.

Mr. Rice—I think any practical bee-keeper would know by the strength of the colony. If they are going to supersede, the colony is decreased in number.

Mr. Holtermann—I asked that question. I don't know with any degree of certainty. I consider that a very serious defect in connection with shaking bees, and I came to this convention to try to get some light upon the subject. In going through a large number of colonies you can't very well make a careful examination and find out whether the cells have all got the age before you begin; and as far as the evidence that that colony has depopulated, and so on, I have not succeeded in finding that a satisfactory test.

Mr. Taylor—If cells are built for superseding at swarming-time it will result in swarming. So that I don't see any particular benefit in knowing one from the other.

Mr. Holtermann—If you break down the one that supersedes, you have stopped the superseding.

BEST HIVE STAND.

"Which is the best kind of hive stand?"

Mr. Wilcox—Generally speaking, a stand that will hold 2 colonies, no more and no less, and of such size and shape as you desire to accommodate your hives, and the location of your ground, and so on.

Mr. Holekamp—I set my hives on bricks.

Mr. Wilcox—The objection I have found to that is that moles will undermine one corner and the hive tip over. That is why I want the stand long enough to hold 2 hives.

Mr. Strong—I have an apiary of 100 colonies, and I put 4 bottles under each hive, and that is permanent. They do not freeze or break.

Mr. Hintz—I build a stand for each colony of bees. I take 2x4x18 inches long, and nail strips about 2 inches wide across those, and I set one hive on each stand.

ADVERTISING HONEY—MATING QUEENS.

"What can be done by the National to place honey where it belongs as a food?"

Mr. Abbott—Advertising.

Mr. Wilcox—If we placed it where it belongs we must make extracted honey a staple article. To do so we must produce nearly all well ripened honey.

"I wish to mate queens on a small island, in the lakes, within 4 miles from the shore. Will all the queens mated be absolutely pure?"

Sec. Hutchinson—I should say they possibly would. When I started in to rear queens I had trouble with mismated queens. I Italianized all black bees for a distance of about 3 miles in every direction, and after that there was no more trouble.

Mr. Abbott—I mated Cyprian queens in St Joseph, and in the city I don't think 1 out of 25 missed; and where my bees were in the country, 2 miles out, I don't think 1 out of 25 hit.

COLOR OF RED CLOVER HONEY.

"What is the color of red clover honey?"

Mr. Townsend—The same color as white clover.

Mr. Davenport—A very light amber.

Mr. Hershiser—I would like to know how they know it is honey from red clover. It blooms at the same time as white clover.

Mr. Hutchinson—One fall we had 500 pounds from a second crop of red clover, and there was nothing else at that time, and light amber is the color, or dark white.

Mr. Wilcox—The reason is because red clover does not yield nectar to any extent until the second crop, and the second crop is in bloom in August after white clover is dead, and before buckwheat is yielding much.

Mr. Davenport—I have known my bees to work very largely upon the second crop of red clover, when there was scarcely any white clover in bloom, and the honey they stored in the hives was amber honey.

Mr. Hershiser—In answer to Mr. Wilcox, I would say that the first crop of red clover does yield nectar, but the tubes are so long the bees very seldom get it.

Mr. Stone—I got a good crop of red clover honey one year from the first crop. Until I got Italian bees there was no seed in the first crop of red clover, and after that a good many of my neighbors got as much seed off the first crop of red clover as from the second.

Mr. Hutchinson—When our bees got that 500 pounds

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of red clover it was all gathered by Italians. The blacks didn't gather a pound.

Mr. McEvoy—I have seen the blacks gather from red clover, but as a rule they don't.

Mr. Townsend—Where I live in Michigan the bees got about 2,000 pounds of red clover honey from red clover alone. This was gathered within two weeks' time, and the color was identical with white clover honey gathered there. I will admit that the color of the white clover honey was not as white as in some other places. I think the color of honey from various flowers varies in different localities.

HONEY CROP INFORMATION FOR MEMBERS.

"Should the National send information from member to member concerning their honey crop, for the purpose of letting members who are short purchase from the ones with plenty of honey?"

Mr. France—Partially that has been done in a private way this season. Several who had more honey than their own market could handle decided about how much they wanted to ship abroad, and made it known to me. I made a table of the list and right opposite I had a list of those who did not have honey enough to supply their customers, and I said, "You go to A.—, he has some honey;" and in that way a lot of the members have been helped through the Association.

Mr. Kluck—I say for one that they should.

Mr. Davenport—I did that last year.

Mr. Abbott—That is what I have been insisting on for the last 5 years, that the National Association ought to be a bureau of information to its members; and every member ought to have a list sent to him so that he would know something about who had honey to sell.

Mr. Moore moved, seconded by Mr. Abbott, that the General Manager be requested, when there is a sufficient number of those who want to sell, and those who want to buy, to make up a circular and send it to the members of this Association.

Mr. Kluck—Our General Manager has always done that. If we would notify him that we have more honey than we can dispose of, he will always find a market for it.

Mr. Hershiser—It costs a very small amount to put a line in a periodical to say you have honey to sell. The Association can't help you do everything.

Mr. McEvoy—Where you don't do that, and send it to the Manager, send 50 cents along to pay him.

Pres. Dadant put the motion, which, on a vote having been taken, was declared lost.

The President suggested that the convention appoint a committee of 3, composed of the members most interested in the matter, to report on the question of amendments at the next meeting.

Mr. Taylor moved, seconded by Mr. Wheeler, that such a committee be appointed.

The President put the motion, which, on a vote having been taken, was declared carried.

The President appointed Messrs. Abbott, Holekamp, and McEvoy as the committee.

QUEENS BY REGISTERED MAIL.

"Is it advisable that we ship our queens in the common mail, or pay a little more and ship them by registered mail?"

Mr. France—The gentleman who asked this question made this reply, that the common mail-bag at many stations is caught from a little post on the swing, and you know what the result would be on those queens. In the distribution of the mail, that class of package is almost invariably thrown into the bags, whereas in registered mail the Government requires that they shall be passed by hand from one to the other.

Mr. Hilton—We had this very question under discussion, and a mail clerk of wide experience tells me almost exactly the words that have been spoken relative to the handling of these cages, and you have only to go into a mail-car to see that this is true. These little bags can be thrown for 10 feet, and they may strike the steel rod or side of the car and then drop in. It will cost 8 cents more to send one or send a dozen by registered mail. The registered mail is not handled that way. It will also take about a day more to get through a registered mail package, because there has to be a record of it made by every official through whose hands it passes, so that it can be traced if lost. I believe queens would arrive in better condition if sent as registered matter.

Mr. Holekamp—My experience has been large. We used to send out every day between 50 and 60 small packages, and we found the registered bees did not arrive as soon as the others. We gave up registering altogether, and we had our packages insured, and we did much better than through the registered mail. I don't believe that registering would help.

Mr. Ferris—I have had a good deal of experience in shipping both by mail and express. I have shipped some very expensive breeders, and my experience is, where you want to get breeders shipped properly, do not have them shipped by express. I have had frames that were ⅞ of an inch thick, and over an inch wide, smashed in two, shipped by express. You can imagine the result with queens.

Mr. Woodman—In registering, don't you have to put the package in another package, and do it up again? How would you supply air there?

Mr. Hilton—We have envelopes of different sizes in which we enclose registered matter. I don't think there is any question about air. They are pretty close when they get in the mail sacks with 150 pounds of mail on top of them, whether in an envelope or not.

Mr. Eidmann—I am in the regular mail service, and I suppose I handle as much registered matter as anybody in the room. In the case of sending one queen the price per registered mail is the same as sending a dozen, or two dozen. In case you send one the postmaster is liable to enclose it in an envelope and seal it, and it will suffocate, while if you have a dozen or larger bulk it will be tied up and a register tag put on. What Mr. Hilton said in regard to the handling is true, but the delay is not as great as most people think. They take the registered mail as soon as it arrives, and it is taken to the next train, providing the connection is too close.

Mr. Strong—I have had experience along the line of sending bees, and I wanted to test this matter of the danger of smothering in the mail. I took a queen I didn't care to keep, and placed her in an ordinary mailing cage. I got a strip of pliable paper about an inch long and wider than the length of the cage, and wrapped it not less than a dozen times around, and folded it down at the ends as tight as I could wrap it, and I threw it into the mail box on the east side of my shop where the sun would strike it. I left it 24 hours, and I then opened it and I expected the queen would be smothered, but to my surprise, there was a lively buzz in the attempt to ventilate—that was all there was. I tried it again and left it 2 days in the same condition, and the sun shone on it all the time; I continued that for a week, and the queen was still in good condition. This shows to me that it is almost impossible to smother a queen in the mail.

FREIGHT-RATE ON EXTRACTED HONEY.

"Can we have a fourth-class freight-rate on extracted honey?"

Mr. France—North, south and west of Chicago the Western Freight Classification recognizes honey in barrels, kegs, kits, and in square cans boxed, or the round package, which I have here, as fourth-class freight. I believe all the associations will adopt what the Central and Western have, as soon as it is made plain.

Mr. Scott—In speaking of rates and methods of shipping, I would like to say something in regard to shipping comb honey. I have had a little experience in that, and my experience has been a teacher, inasmuch as I have paid higher freight rates a great many times than was necessary. I have quit it, and I have succeeded in collecting over-charges on shipments of comb honey instead of letting the producer do that. The classification on comb honey is not so plain, but what it is very often misconstrued by agents at small shipping points. They wish to be on the safe side and they bill it as first-class, when comb honey packed in wooden cases should go as second. That holds good all around, and every way from Chicago. We have been paying first-class rates. If you will notice the marking on your freight bills you will see it was invariably sent as honey in glass. The agents are called upon to do the billing. This ought to be done by the bee-keeper in every instance, and be sure to cau-

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tion the agent that it must go as second-class. I refer him to the joint inspection bureau at Indianapolis. Mr. Barr, who is a high authority on freight rates, says, that many bee-keepers make a mistake in shipping comb honey with the glass exposed. That was advocated several years ago. The freight-handlers can understand what they are shipping. If you have to put in a claim for broken honey, that is where the difficulty will come in.

Mr. Stewart—I ship considerable honey, and there should be different classifications for shipping comb honey. If you want to get the best classification you want to box your honey and bill it "Comb honey in cases boxed." It will then go as second-class freight, whereas, if it goes without boxing, it will go as first-class. Look into the billing of honeys and you will find in the Eastern Classification different classifications. It makes all the difference in the world whether it is boxed or not.

Mr. Holtermann—In the direction of giving instructions as to the best method of shipping different lines of goods, the bee-papers could do something. We have a Railway Commission to bring our cases before, and their decision is final. They can force the railroad companies to give us a reduced rate if they think it just and right. I was on a committee on that question and we decided the bee-papers could help.

DEFENDING MEMBERS.

"Shall the National Association defend its members when spite is at the foundation, and the bees are simply made an excuse for persecution?"

Mr. McEvoy—Where there is reasonable ground, I think the association should defend him.

On motion of Mr. Kluck, seconded by Mr. Niver, the convention adjourned.

THIRD DAY—EVENING SESSION.

At 7:30 p. m. Pres. Dadant called the convention to order and said: "I wish to thank the convention for the courtesy shown me. I have found the members much easier to manage than I expected. I did my part. I think you will all appreciate the fact that although I am not a very good parliamentarian, I tried to do the best I could. I started with some trepidation, feeling I would not be up to the task, but behavior of the members has been such that it has made it easy and comfortable for me. So I thank you all." [Applause.]

Mr. Putnam then read a paper entitled,

IN WHAT WAY CAN BEE-KEEPERS SECURE THEIR SUPPLIES AT LOWER PRICES?

Coming in contact, as I do, with many thousands of bee-keepers, I am amazed at the indifference displayed by the 99 out of 100 who are attempting to make a part of their living out of bee-keeping. It is variously estimated that from 400 to 700 thousand people in the United States are to some extent engaged in bee-keeping. Of that vast army scarcely 2,000 can be coaxed, entreated or bribed to join a bee-keepers' association of any kind. I have heard our General Manager talk for hours to a gathering of bee-keepers, detailing the benefits to be derived from organzation, and had it not been for the determination of one or two who had originated the movement, the organization could not have been effected.

The first step in the way of lower prices, then, in my opinion, is to awaken interest—to induce the bee-keepers themselves to co-operate. But let us see. What are the conditions? We find that the catalogs read very much alike. Without sections and starters the 1½-story 8-frame hive, nailed and painted, $2.45; nailed only, $2.20; 1 in flat, $1.85; 5 in flat at $1.70; 10 in flat at $1.55; 25 in flat at $1.45 each. The foregoing are supposed to be for retail amounts. The wholesale range is from 25 to 200 hives on a descending scale—50 hives at $1.35; 100 at $1.25; 200 at 1.15 each; and finally the carload price of $1.02 each.

Some dealers put a Chinese puzzle before their quotations, and if you are an adept at rebus deciphering you will make out that A E 5 2 S 8 describes the same articles as mentioned above. One dealer says, "What's the use of all these tables of complicated figures? I will make a flat rate, one hive $1.85, and give the customer a discount of 25 to percent, according to the amount purchased."

Now there is a discount for early cash orders commencing with 10 percent in September and decreasing as the dull months pass by, until finally in March the net price is reached. Some dealers quote a scale of prices 10 cents per hive lower than above quoted, beginning with one hive at $1.75 and ending with 92 cents as a carload price. These are printed prices and the wise bee-keeper knows that all he has to do to get a less price is to write to half a dozen dealers or manufacturers and tell them he will give his order to the lowest bidder, and he will get as many different quotations as he does replies. How do I know? Only last month a reputable firm which turns out $30,000 to $40,000 worth of bee-hives and supplies a year, and which publishes prices at the highest rates, named me a price of 85 cents per 8-frame 1½-story hive, and $2.98 for No. 1 sections.

Only last year, at our St. Louis meeting, I was asked for prices by one of our leading members. I quoted him 92 cents for an 8-frame 1½-story hive, and had the sand taken completely out of me by his firm and positive assurance that my prices were away too high—that he could do very much better down home in York State.

Where is the bee-hive trust? Where is the combination among manufacturers when such a state of affairs exists? Like that other ghost that haunts the path of the poor, deluded bee-keeper—the artificial comb-honey lie—the trust does not exist, or exists only in the imagination of some demagog who is bent on deception and fraud. Nevertheless, the vast army of bee-keepers are paying the long price for their supplies and receiving the short price for their honey; but they are the bee-keepers who do not take a bee-paper, and who do not belong to an organization of bee-keepers; they are the people who wait until the last moment, and rush to the nearest bee-keeper or dealer for a hive into which to hive the bees that swarmed before the bee-keeper thought of procuring a hive.

The vast amount of ignorance in connection with bee-keeping may be illustrated by the true story of the darky boy employed at a dairy, who came to me one September evening about 25 years ago with the news that "Our bees didn't have anything else to do so they thought they would go swarming—yes, mister, they be hanging on a limb waitin' for dat hive." Needless to say he consented to pay $2.50 for a bee-hive—which, by the way, he never did. And this brings me to an important part of my argument.

THE CREDIT SYSTEM.

The present credit system is responsible for a large part of the increase in price. When the elder Root established the mail-order, cash-with-the-order system of supplying this class of goods, it was a cash system. To-day the middle man buys for credit—not 30 or 60 days, but on long time. He will pay the manufacturer for the supplies when he has sold them. Allow me to quote from page 10 of "Collateral on Merchandise Accounts" under the heading of

"PROTECTION OF PROFITS—RISK IN CREDIT."

"Profit is the ultimate object of all commercial enterprise, and a reliable conserver of profits is therefore of incalculable value to general business. As long as goods are sold on credit, the risk of loss through insolvency of customers is constantly impending. The gravity of this risk is appreciated when one considers how little a dispenser of mercantile credit positively knows about the actual financial condition of each of his customers, and the inside facts of their business. And think of how many accounts are outstanding all the time, each involving risk of loss through the incompetence, inexperience, lack of capital, unwise credits, neglect, extravagance, competition, crop failures, strikes, money markets and speculation, which may cause the insolvency of customers. It is not surprising that the losses through insolvency exceed the losses by fire in the United States."

The above refers to general business. The merchants referred to are those of regular trade—dry goods, groceries, hardware, etc.—all of which are rated and reported by Dun and Bradstreet, with whose assistance it would seem that a comparatively close estimate could be made of a man's financial standing. Nine out of 10 of the people who ask for credit as distributors of bee-hives are men without commercial rating. How much more difficult must be the task of the dispenser of bee-hive credits. As the risk increases,

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so must the margin of profit, to cover the risk increase, so that the fellows who do pay must also pay for the fellows who never pay.

We have here a range of prices beginning with the cash carload buyer at 85 cents per hive for 8-frame 1½-story, and increasing under the varying conditions of credit and quantity until the purchaser of one hive set up and painted pays $2.45, without sections and foundation, or $2.85, complete and ready for the bees. Does it require a Sherlock Holmes to discern the remedy? Organize! Co-operate! Employ the man from New York to do all the buying for all the bee-keepers! Form one vast co-operative association, and every member will get supplies at the lowest rates! It is being done in spots all over the country. Why not let the movement become general? In my locality an association bearing the name of the St. Croix Valley Honey-Producers' Association has 110 members. A 2-leaf circular is the extent of its earthly possessions. The association actually distributed from April, 1904, to May 1, 1905, about $1,400 worth of bee-hives and supplies. The purchaser of one bee-hive got it for $1.02 and freight; the user of 1,000 No. 1 sections got them for $3.00 at any time through the season, local freight added. The officers and managers of that association received the sum of $52 for their year's services. The association produced and sold for cash at the car-door 3 carloads of honey. The manager of the association received $19 for his services in the marketing of honey. The bee-keeper paid the short price for his supplies and received the long price for his product. The same thing has been going on for years in Colorado. The continued success and harmony of the Colorado Honey-Producers' Association is a case in point.

We must not be too narrow in our vision or comprehension. I have shown you the state of affairs as it exists today for the purpose of mutual benefit. There is reason on both sides. The bee-keeper who keeps bees for profit cannot afford to pay $2.85 for his hives. Neither can the manufacturer afford to sell a well-made bee-hive from good material at 85 cents. He does so at a loss, and if all his sales are made on that basis it is only a question of time when that manufacturer will suspend.

By the way, had you heard of the recent advance in the price of shop-lumber? It is getting scarce and now commands a price of $3 or $4 per thousand more than one year ago. Then there are the requirements of standard goods. The lumber must be clear, surface smooth two sides, ⅞ thick. There are only a few mills that saw lumber that will season out and surface two sides ⅞. All St. Croix and Mississippi river mills cut green ⅞, and when seasoned out will barely skin ¾. A large box manufacturer and lumber dealer recently remarked to me, "It will only be a year or two more that you fellows can cultivate that ⅞ fad." It is only the extreme Northern mills that cut for the Eastern market that can supply the full inch shop lumber, and as each mill completes its cut the circle of available material rapidly diminishes, and in consequences the price goes up.

There is no doubt about it—the soft white pine, full ⅞ thick, is the best bee-hive on the market. A bee-hive may be made from clippings and scraps from some wood-pile, scant thickness and mixed quality of material—some white pine, some Norway, some cross-grained, cross-breed material—and sold for less money than the standard goods, but the quality is not there, and in the long run it will be found that the standard goods will out-last the cheaper article.

Nowhere will the well-tried maxim prove more true than in the purchasing of bee hives—"The best is the cheapest."

W. H. PUTNAM.

Mr. Aspinwall—I note one remark in the paper, that the bee-keepers who are successful have to pay for the ones who make failures, and that have long credits extended to them by a jobbing house which charges for their hives and supplies. That seems to be the rule in every department of human affairs. You and I pay high hotel bills because of the man who uses the soap, and takes the towels away, and breaks things; also the table is extravagantly luxurious probably two or three times more than it need be. There are numerous lines in which the same thing is made to balance the extravagance and wastefulness in all departments. I don't know but that is the only safe way. However, there are lots of things in the article to commend it, notably one, where the Association can buy in large quantities and so purchase at a discount.

Mr. Fred W. Muth then read a paper entitled,

HOW THE PRODUCERS AND DEALERS MAY ADVANCE THEIR MUTUAL INTERESTS

My subject was given me by our worthy Secretary, and, I believe, as a nut to crack; when finished, I will leave you to judge as to whether or not I have succeeded.

As a dealer, I am proud that I am afforded the opportunity to speak to you on this subject, for it is the most important one before this convention, for the reason that it touches the pocket-book of the fraternity.

I will endeavor to give vivid descriptions of some shipments of honey as received; dissect a number of transactions, and show results. Furthermore, I will prove to you that it is indeed necessary for many producers to use better judgment in grading their honey, and also to use better packages, so that their product will command marketable prices. At the same time, however, I will describe to you clearly some nice shipments of honey, and their results.

Some time ago, a party sent us some 20 odd barrels of honey; it was in the month of September. When they arrived at the depot, we were promptly notified by the R. R. Co., of the leaky condition of the lot. Our drayman, accompanied by a cooper, repaired quickly to the depot, in order to get the barrels into shape, so that they could bring them to the store. When the barrels were rolled over the sidewalk, the honey oozed out from between the staves. The cooper attended the packages at three different times, and even then did not succeed in checking all the leaks. Our motto from the very beginning of our business career, has been, "Money back the day shipment is received," and we always adhere to the motto. However, we cannot afford to lose any money on account of another's negligence. We immediately informed the shipper of the exact state of affairs, telling him at the same time that we could not possibly remit for this shipment until after we had disposed of same. We furthermore stated, that, on account of the poor cooperage, and the close margin of profit, we could not do otherwise, but promised to let him hear from us, at an early date. Well, in a comparatively short time, we received a real nice letter from the A. I. Root Co., in which they asked why payment for this honey was withheld, etc., and at the same time they stated that probably the shipment was too large for us. We sold 10 barrels of the lot, which were shipped out of the city. When they arrived at their destination, we received a telegram from the consignee as follows: "Honey at depot all leaking; refuse to accept." We responded promptly by wire, asking him to please accept the shipment and protect our interests. This shipment had been attended to by an able cooper before it left the store, and we fully believed would stand shipping.

Such transactions are not to the mutual advantage of the producer and dealer. The result—no more shipments from this producer, for he really believed we took advantage of him.

Now, then, I call to mind another shipper, who has shipped us no less than 300 barrels of honey to date. When he makes a shipment, he forwards, with the B.-L. a letter, in which he enumerates the barrels, gives the weights, gross and tare, and describes the quality and flavor of the honey with such accuracy that we know exactly how it tastes by his letter. I wish to add here, that his honey is always free from dirt and is well ripened. Frequently his shipments are sold before they reach Cincinnati, for the reason that we can depend upon his weights, and so far there has never been a leaking barrel received. Many of you know this gentleman, he *is* a bee-keeper. Such shipments are certainly an advantage to both the dealer and producer.

Two years ago, I visited a bee-keepers' home, and saw 50,000 pounds of comb honey he had produced that season. He cases his honey immediately, and just as it comes from the hive, making no distinction in the grading, places the good with the poor quality, and, should there be a leaky section, does not discard it, but places it in the case with the honey that is sound and solid. Had he graded his honey carefully, we would have bought the lot on the spot. Besides being interested in the bee-keeping industry, he is a farmer, and, by the way, his farm contains 1,000 acres; he is also an extensive stock-buyer. I know his bees do not receive the attention they should, for his other interests crowd him. At the time, I told him that I would buy his honey if he would grade it properly, stating that it would pay him to do

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so. He replied by saying that he had no difficulty in disposing of his crop. Right he was. We received several shipments from him, just to see how it would sell, but on account of the grading, we could not possibly pay him the price he could have otherwise demanded. Transactions of this kind give rise to the fact that such shipments are neither profitable to the producer nor the dealer.

About one month ago, a farmer walked into my office, and asked for Mr. Muth. When I had made myself known, he said he had 223 cases of comb honey down at the wharf-boat, and asked what we were paying for good honey. Upon my question as to how it was packed, he replied, "In the caps, just as it was taken from the hive." "Why," I said, "isn't it in shipping-cases like that honey over there?" pointing to some nicely packed comb honey. "No," he said, "it is still in the caps, and when I sell it, I want the caps back, as I thought I could probably make a trade, that would be worth my while." I told him that we made no offers, unless we saw the exact condition of the honey, but if he would name a price that would justify, I would go down to the wharf and look at his lot. I can assure you he startled me when he said, "If you will take the whole lot, and return the caps, I will make the price at 14 cents; that's the price at which fine honey is selling." Of course, I was not interested, and I failed to understand or learn where he sold his honey in our city. I really believe he went on down the river. I leave it to you to form your own opinion of such shipments.

Now, let me relate another transaction with a producer, who understands his business. This bee-keeper wrote us stating that he had some 25,000 pounds of comb honey that graded Extra Fancy, Fancy, and No. 1, and that he knew it would please us, for it was graded according to rules and his best judgment. He quoted a price that met with our approval, and his correspondence was so satisfactory that we immediately came to the conclusion that he was a practical bee-keeper, and informed him that we would accept the shipment at his price, provided he would ship us as a sample a few carriers of each grade, and if the same came up to our expectations, he could expect our order for the entire lot. Promptly we received a shipment of 15 carriers. (By the way, this was the first shipment of comb honey this season).

Right here I wish to relate to you how I disposed of the first cases which I used to feel the pulse of the market. The day this lot arrived, a dealer in bee-supplies and honey from another city was visiting at our store. The 15 carriers, consisting of some 160 cases, were opened, and a finer lot of honey we never saw before. I took one of the cases, told my friend, the dealer, to come with me, and I would show him how to sell honey. Our first stop was at the finest retail grocery in Cincinnati. The proprietor, a fine gentleman, wants only the finest of everything, and is well posted. Passing through the store, saluting the clerks, I was making up my mind as to how many cases I should sell him. "Shall I say 25 or 30 cases?" said I to my friend, "or shall I sell him 40 cases?" I finally concluded to sell him 50 cases and make the price 15½ cents per pound. I walked up to the elderly gentleman, who is always very busy, and business must be done quickly and to the point. I showed him the case of honey: he knew I would offer only the finest. He asked if the lot was all like that sample case. My reply in the affirmative closed that sale of 50 cases at 15½ cents, in less time than it takes to tell it.

When we were again on the street, I remarked how easy it was to sell at 15½ cents, and proposed that we go to another store and try our luck at 16 cents. Well, I did sell 8 cases at 16 cents, and felt that I had not reached the top of the market even at that price. We repaired to the next store, and after quite a bit of hesitation and arguing, I sold another 10 cases at 16½ cents. This price, however, proved to be the limit, for at the next store I tried my very best to sell this party 5 cases at 17 cents, but in vain. He was willing to pay 16½ cents, but no more; sold him 2 cases. Well, in this way, we learn what price the market will pay.

This producer shipped us honey as fast as he could pack it; we forwarded a check the very same day shipments arrived, and in the entire shipment, just think of it, there was not one leaky case! His honey was packed as he stated in his first letter, viz., Extra Fancy, Fancy, and No. 1. The rows in the center of the case were equally as fine as the ones next the glass. This producer is certainly an honor to the fraternity, and if more would follow his example I know there would be less complaints and lamenting about the cheap prices of honey.

Recently, a bee-keeper shipped us a barrel of beeswax at which time he wrote us stating that he knew from past transactions that we would do the right thing by him. The wax was not all choice, but upon its arrival we separated it, allowing him 30 cents per pound for the good quality, and 25 cents for the poorer grade. A few days before I left home, I received a letter from him stating that he received our check for his wax, which was more than he expected. We may also depend upon him for his shipments of honey in the future. It pleases us when a shipper is well satisfied.

Here is another transaction: Recently a party shipped us 21 carriers of comb honey, 12 over one road and the other 9 over another. Never before have we seen honey packed as this was. The bottom of the carrier was the exact size of one case; there was a thin layer of straw, upon which were placed 5 cases of honey, one above the other. This, with 4 sides and a top constituted the carrier, which could be rolled about as a baggage master would handle a trunk.

FRED W. MUTH

The condition in which this honey arrived was most deplorable. Five of our employees worked one whole day overhauling the lot. The fruit of the day's work was a great big lot of chunk honey that we were compelled to close out at 6 cents per pound. Withal, we are still in hopes that the R. R. Co. will grant reclamation, and if they do, we will send the shipper a check in full for his shipment. Now, when we forward remittance to this shipper, we will write him a nice letter, telling him how to pack his comb honey in the future, so that it will stand transportation. I venture to say that our advice will not be received with gratefulness, but probably with scorn. Now, if the bee-papers, which are ever ready to do the individual bee-keeper some good, would print slips teaching the bee-keeper how to prepare both his extracted and comb honey for shipment, using as few words as possible, and enclose one of these slips in each copy of the paper for one whole year, believe me, the benefit derived would be amazing.

And last, but not least, I want to relate a little instance that will close my talk on this subject. Some time ago we opened communications with a producer of comb honey—of whom we had heard, 'tis true, but had never had any dealings with him. Well, he hesitated and procrastinated so long that we finally wrote him stating that he had very little faith in mankind, and that if he didn't trust us, he needn't mind shipping us his honey. He was satisfied with our offer, and decided to favor us with his shipment. Wl

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he advised us to that effect, he wrote us saying that since we surmised that *he* had very little faith in mankind, he in turn took it for granted that *we* must have a great deal of faith, and he therefore makes bold to ask us to remit for the shipment, upon receipt of the B. L. Naturally, we are adverse to doing business that way, and his statement necessitated another delay.

Again we wrote him that we are honest and trustworthy, and referred him to a number of prominent persons. I don't know if he inquired about us, but we finally received a letter from him in which he simply stated that he shipped us 17 carriers of comb honey, gave us the weights, and requested us to remit him when the goods arrived. His honey arrived in due time and in good condition, for well did he understand the art of packing, and the honey was *very* fine. We could not have criticised, nor even offered a single suggestion. The same day his honey arrived, we sent him a check that amounted to more than he expected, for the honey weighed more than he had stipulated. I know he held his breath when he received his money, for in one of his first letters he blankly stated that he expected to be fleeced. If that gentleman is in the audience, I want him to rise and tell you what he named me after he learned our method of square dealing.

This concludes my speech, if I may so term it, and I trust you have benefited thereby, in learning how the producer and dealer may advance their mutual interests. I thank you. FRED. W. MUTH.

Mr. Eidmann—I wish to say this in regard to Mr. Muth's paper, that I was present at the time that comb honey shipment came from Illinois, and it was just as he stated. I may say Mr. Muth took as good care of the honey as the shipper could have done; he had the shipper's interests at heart. He was not there, but his men were.

MOVED BEES DO BETTER THAN UNMOVED.

"Why do bees removed a considerable distance in spring invariably do better than bees in the same locality not having been so moved?"

Mr. Baxter—I have observed that for 20 years, and those move to out-apiaries have done better than those that had been there all winter. I have been trying to find out how it was, but I can't.

Mr. McEvoy—What time did you move them?

Mr. Baxter—April and May.

Mr. McEvoy—Before fruit-bloom or after?

Mr. Baxter—Before and during fruit-bloom. I moved them from 3 to 5 miles. I have noticed that every year, invariably.

Mr. Stone—I would like to ask Mr. Baxter if he was not a little choice in selecting the bees he moved. May be he took just the ones he knew were very strong and moved them, and then compared them with some that were weak and strong together.

Mr. Baxter—No, sir, I have not. I have taken them on the average, some weak and some strong, but both did better than bees that were not moved.

Pres. Dadant—I have remarked the same thing. I ascribe that to the fact that the bees having been moved are disturbed and more likely to breed, and produce more heat. I do not know whether that is the answer.

Mr. Niver—We found out in New York State that our home-apiary in the village wintered better, and seemed to get pollen in the spring much quicker, than they did in the out-apiaries. We noticed the same effect when we moved them from the home-apiaries to the out-apiaries; they were the strongest and did the best. It was a better place to winter.

Mr. Aspinwall—As the discussion went on it occurred to me that the cause was the same as the President suggested, that they fed themselves with honey which was largely used to secrete the larval food, or food to supply the queen, and egg-laying ensued.

Mr. McEvoy—I was going to remark the same as this gentleman—the jarring and jolting caused them to uncap and prepare a little more; at the same time they are led to stimulate more.

Mr. Wheeler—I have noticed the same thing, but I attributed it to the fact that where we wintered our bees we didn't pay any attention particularly to the flow of honey. It was the most convenient place. When we start an out-apiary we are always thinking about the location, and we are more apt to take them to a place where there are more honey flowers.

Pres. Dadant—In the case of Mr. Baxter, the bees were moved to places where there were other bees, and they did better than the bees that were on the spot.

Mr. Baxter—In some instances I practice the feeding in the spring to stimulate and move the combs as occasion may require, to get as much brood as possible. I have done that in these apiaries from which I have taken these bees, and if it was the result of stimulative feeding, why didn't those bees profit from that stimulative feeding, as well as these that gorged themselves with honey on the trip?

NUMBER OF COLONIES REPRESENTED.

"How many colonies of bees are represented in this convention?"

Mr. France—In regard to the National Association, I have a good many objects in view in the Annual Report to make it of value to its members. One is the crop report, and it is not half completed because the members did not give me their reports. It is not satisfactory. I would like to make these volumes something that you would retain in future years, and care for them sufficiently to bind them.

Mr. Hershiser—Couldn't it be bound better when it reaches the bee-keepers?

Mr. France—Yes, it could. That crop report is of a value that many of you do not know. In Michigan they get up a leaflet bulletin, and that has pretty nearly marketed the honey for Michigan. You get it largely, though, in the rough, and in the full report later on.

Pres. Dadant—I hope the members will bear that in mind, and when they receive the blank from our Manager that they will pay more attention to it. I trust most of you are not among the guilty ones.

SHIPPING COMB HONEY.

"What is the best method of shipping comb honey in less than car lots?"

Mr. Muth—If they are 24-section cases the best method is carriers containing 8 cases each, with straw underneath and handles on the outside, and marked with great big letters, "Handle with care. Comb honey. This side up." You can ship it in that way from one end of this country to the other, if it is done right. Mr. Taylor understands it better than I.

Mr. Taylor—Everybody knows my method. The shipment I made, to which reference is made, I shipped in carriers that would hold nine 24-pound cases; it would hold 3 in the bottom and 2 upon each one of the 3—9 cases. In the bottom I put 3 or 4 inches of straw. I think peastraw is first-rate, if one has it; it is sort of springy and does not pack together so much as some other kinds. Have the carrier so made that it will retain the straw, and then put in the cases upon the straw. I generally have one case at each end that shows the glass a little. I don't know whether that is an advantage or not. I sometimes think it is not. I sometimes think a person handling it, if he sees the glass, may be a little more careful.

Mr. Muth—Right here is a point. The truck man or railroad man just likes to put a foot through it for fun, and then stick their fingers in to taste the honey. Turn it around the other way, and they won't do it.

Mr. Taylor—Then I give directions upon the top of the carrier, "Keep this crate cross-wise of the car with care." That is all there is to it. Putting it cross-wise of the car makes the sections stand lengthwise of the car, so that they will stand a great deal more jolting than the other way.

Mr. Hintz—How do you pack the 9 cases in a carrier?

Mr. Taylor—Put 3 in the bottom side by side, and then upon each one of them, 2; that makes 9.

Mr. Wheeler—Do you put two handles on the side?

Mr. Taylor—The carriers are so made that there is a place to take hold of them. The handles don't stick out on those carriers. If I were making crates or making carriers to ship honey, I would make them so that they would hold 6 cases instead of 9, and be handled more easily, and perhaps more safely. So that there would be 2 piles of 3 each instead of 3 of 3 each.

Mr. Hintz—You have nearly 400 pounds?

Mr. Taylor—No; they would run about 25 pounds to a

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case; 9 times 25 is 225—perhaps 250 pounds besides the packing.

Mr. Muth—I believe the carriers that contain eight 24-section cases, with carriers all the way through on each side, are more preferable, because two men can handle them better. I remember with one shipment we had to have a strong man go down there and help, and I had to go down, too.

Mr. Aspinwall—I believe Mr. Muth has suggested that the bee-papers send instructions to the comb-honey producer as to packing. How would it do for the jobber to do so every time a letter was sent or received?

Mr. Muth—We are always doing that. We are going to put them in printed form.

Pres. Dadant—I believe a private letter would be read with more attention than printed circulars.

Mr. Muth—Whenever we get a shipment of honey that is real nice, if we can criticise we always try to tell the shipper where it could be better.

Mr. Scott—It might be added to what Mr. Taylor has said, that in making up the crates the slats are always up and down in a carrier crate, and it is just as handy to have this part to which the top of the up-and-down boards are nailed about 8 or 10 inches longer than the crate is to be. That leaves 4 or 5 inches at each end to stick out, and that is suggestive itself to the railroad man to take hold of that. And be sure and mark it comb honey. I was at one time checkman in a freight-house, and when we could see anything of that sort we were in duty bound to caution the truck man to be careful. That does some good in one way, but it is to your disadvantage if you have to collect a claim when the officials come to it. Cheap hay is as nice a cushion as I have ever seen—even excelsior, but it is finer, and the bottom of the crate has to be tight.

Mr. Hershiser—Have you seen hay made into a rope and put around? It is twisted in a rope, and it is more of a springy nature.

Mr. Wheeler—I would like to ask Mr. Muth if he thinks it at all advisable to use packing on the sides and top of the honey, also between?

Mr. Muth—No, sir. Down below only. Then put them close so that they don't jar. Don't show the glass. That is all rot.

Mr. Niver—I found in shipping honey quite extensively in York State that it was very nice to have a large circular printed in large letters to put on top of the case; and the most important thing I have found to put on that case was, "Don't handle on a 2-wheeled truck." That is what breaks more honey than anything else, by tipping the honey. The angle at which it is held is just right to hit the edge of the section, and drive the honey out of the comb. I found that was the main breakage point. Put that label on, and ship them without any carrier.

Mr. Muth—The railroad company will not receive honey for local shipment in single-case lots.

MEMBERSHIP FEES.

Is the acceptance of members at 50 cents, when an association joins the National in a body, fair to the other member who sends his $1.00 in?"

Mr. Muth—Yes. Be grateful.

Pres. Dadant—My impression is that the time is coming when we will get members in no other way.

Mr. Kannenberg—I think the member who pays the dollar has the same chance as the other that pays the 50 cents.

CHANGING FRAMES—LEAVING HONEY ON HIVES.

"Will it pay me to change the Standard Langstroth frame when nearly all of my 200 hives now in use contain the old-style of loose-hanging frames, which are 9⅛ inside?"

Mr. France—I would say no.

"Is honey injured by leaving it on for days after being capped, where extracted honey is taken off?"

Mr. McEvoy—When it can possibly be taken out soon after it is capped, the honey is thicker than if left later.

Mr. Kluck—In a wet fall and cold weather it may do that; in a dry climate and dry weather it won't make any difference.

EXTRACTING FROM SAME COMBS YEARLY—POUND SECTION.

"Is extracting from the same combs every year right? If not, what is the objection?

Mr. Baxter—I say yes, of course, every year. I have combs I have been using for 25 years, and I can't see any difference in the honey. I have combs as black as the ace of spades, and the honey is white.

"Why not have a section that will hold, when well filled by the bees, one pound?"

Mr. Hershiser—Because you can't get such a section. Sometimes the bees will fill a section made to hold a pound, but more often it won't hold quite a pound; whereas, if you get a section a little larger than that, that will hold a pound when not well filled, it will hold more than a pound when well filled.

Mr. York—When you get the bees to put in just a pound, you will then have a section for it.

"How would a section be 4¼ x 5 x 1⅜ for holding a pound of honey?"

Mr. Muth—It would be impracticable, because we have so many different sizes of sections on the market, and they are a humbug, 9 out of 10.

Mr. McEvoy—It takes too much wax.

(Concluded next week.)

Send Questions either to the office of the American Bee Journal, or to
DR. C. C. MILLER, Marengo, Ill.
☞ Dr. Miller does *not* answer Questions by mail.

Variations in Queen Progeny

Is it possible for a queen to produce 2 and 3 banded bees, and also others without a trace of yellow. I have such a colony, and the only queen I have ever found in the hive is a yellow Italian reared in my own yard this season. There can be no old queen, because the colony is an artificial swarm made this season, the bees having killed the queen I gave them and reared this one from brood of an Italian queen I gave them when the swarm was first made. This first queen proved defective, and the one killed was sent me by the breeder to replace the first.

KENTUCKY.

ANSWER.—You are very likely counting that when a yellow queen mates with a black drone, the resulting progeny will be midway in appearance between the yellow and the black. Well, to get such a result so that all the worker progeny should be alike in appearance, you would have to work through many generations. The first cross, instead of being uniformly colored with an intermediate shade, will be just what you have found, some copying after the father, with no tint of yellow, some copying the mother, and some with various shadings. In other words, your bees, if a yellow queen met a black drone, have merely followed the general rule. Nor is this an exceptional matter with bees. Look at a cross between a white cock and a dark hen, and see what is the result. Or, if you have no poultry handy, study the human race. If a father has very dark hair, and a mother very light, see if the children have hair all alike of an intermediate shade. Don't you know it's the common thing to say that one child resembles the father and another the mother?

Similarity Between Caucasian Drones and Workers

I sent for 2 tested Caucasian queens, received one Aug. 7, and introduced her to a queenless colony quite strong in bees, and the queen was well received. She must have

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commenced to lay the same day. That was Tuesday, and when I opened the hive the following Saturday I was surprised to find so many eggs. There were about 5 combs filled with eggs—as full as we usually find them—and in the central combs the eggs had already hatched, showing patches larger than a silver dollar, with this milky-looking food in the bottom of the cells. In due time the bees began to hatch. About two-thirds show the markings of Italian bees, and the remainder are black. Later, when I opened the hive again, I found a large number of undersized drones, reared in worker-cells, marked like the workers, but the blacks are in the majority. But the strangest part about it is, I find the cappings of the sealed brood all flat, not raised or rounded like drone-brood, and I can't tell any difference between drone and worker brood until they hatch.

1. Can such drones fertilize queens?
2. How can such drones be kept from flying, because they can go through the queen-excluding zinc the same as workers?
3. Is this common with Caucasian bees?
4. What would you do with such bees?

IOWA.

ANSWERS.—1. It is claimed that such drones are virile, but I'd rather have drones from eggs laid in drone-cells.

2. I don't know of any way.

3. I think not.

4. I think I'd be likely to pinch her head off.

In spite of your saying the queen was well received, it looks at least a little as if laying workers were present. In order to be sure of no mistake about drones emerging from cells sealed flat, you should be able to see the drones emerge from them. If the queen laid the eggs from these drones, even if she began laying the day you introduced her, Aug. 7, which is not so very likely, especially eggs in such large quantity, the first of the drones could not have emerged before Aug. 31, and some things in your letter, dated Sept. 2, sound a little as if there were drones before that time. If laying workers were present, and if the queen is still there, it is just possible that she is laying all right now. If she is rearing mostly drones, she is no good.

Do Bees Carry Water at Night?

Please tell us what you think about that night shift of bees carrying water, as given by D. J. Pawletta, on page 723. OHIO.

ANSWER.—There have been reports of bees staying out over night, and possibly of their working on bright moonlight nights on basswood, and I don't know just how correct they were, but I don't remember hearing before of their carrying water at night. Of course it is not entirely safe to say a thing is impossible just because it has never come within one's knowledge, but one may at least be excused for being a little inquisitive as to each bee starting the very second her predecessor sets foot on the alighting-board, and never more than one going at a time. Might not more than one bee happen to be on the lookout for the returning bee, and then might not more than one start at a time? and how can one be sure that there is never more than one?

Absconding Swarm

I have kept bees for about 30 years, have read some bee-literature, such as books and the American Bee Journal, for nearly a year, and so have had a little experience with bees, but I have never before met with an incident like I had this summer.

My neighbor caught a runaway swarm of bees which had clustered on the limb of an apple-tree. He hived it in a Langstroth hive, and it seemed to do all right for about 5 or 6 days. The 7th day he thought that one of his other colonies was swarming, but finally discovered that it was the runaway swarm which took its flight to the woods. The next day he saw that the runaway swarm was still at work, but very slowly. He did not pay much attention to this curious action, and never opened the hive until I happened to be there about 3 weeks after the occurrence. He asked me to open the hive and examine the bees. On so doing, I found about a pint of bees, no queen, no brood nor eggs, but found a capped queen-cell.

Where did the bees get the egg in the queen-cell, or do bees ever cap empty queen-cells without eggs in them? or did the queen lay the egg and then fly away to the woods with part of the colony? ILLINOIS.

ANSWER.—The unusual part in the case comes only at the last. The swarm absconded, leaving some bees, and these few bees remained and did the best they could. You say you made an examination "3 weeks after the occurrence." If that means 3 weeks after he hived the swarm, then there is nothing particularly unusual in the whole case. I suppose, however, that you mean 3 weeks after the swarm absconded, during which 3 weeks there was, presumably, no queen in the hive. Here, then, was a sealed queen-cell 21 days after the departure of the queen, and any well-conducted virgin should emerge from a queen-cell within 15 or 16 days after the laying of the egg. You ask whether bees ever cap a queen-cell with no occupant. I never heard of such a thing, but why in the world didn't you open the cell and see what was in it? It is practically certain that the cell was occupied. A laying worker may have laid the egg before her departure. Dzierzon reports a case in which the bees held eggs a week or so without hatching, and I have seen unsealed brood in a hive more than the normal 8 or 9 days after the removal of the queen. Another solution of the problem is to say that the queen-cell was started in the ordinary way, and the larva died in it after the sealing. So there are 3 different ways in which it might happen that you found a sealed queen-cell 3 weeks after the queen had left.

Removing Supers in the Fall

I am 25 years old and have been keeping bees for 6 or 7 years. My father is a farmer. This is not a very good country for bees. I don't think they did very well last year, and this year they are no good. They had more honey in June than they have now. Some have honey in the super, but the brood-chamber is dry comb with brood. But I will try to feed them up heavily this fall. I would like to take off all the supers now and let them work only in the brood-chamber. If I do take them off, must I watch for the moth-worms, or don't they work in September? I have been bothered with them this summer.

MISSOURI.

ANSWER.—There is not very much danger of trouble from bee-moth in supers taken away in September, in your part of the country, especially the latter part of September; but it is well to look over the combs perhaps 2 weeks after they are taken off, and if you find the worms at work, to fumigate them with bisulphide of carbon, or sulphur. This is on the supposition that your supers contain extracting-combs. There is less danger if the supers contain sections, but even then it will be well to take the same course.

Queen's Eggs that Fail to Hatch

On June 9, after destroying the old queen in a strong colony of bees, I gave them a ripe queen-cell enclosed in a cell-protector. I examined them 12 days later, and found the young queen laying nicely. Three weeks later I examined them, expecting to find brood hatching and in all stages of development. Imagine my surprise when I found nothing but eggs, which were laid regularly and only one in a cell. The queen was a nice yellow one, good size, and with perfect wings. I have examined them at intervals of 2 and 3 weeks since then, and have found nothing but eggs and no brood at any time. They have dwindled down to a few bees. There are eggs in the hive at present, but no brood. I've been taught that a queen's eggs will hatch drones whether she is fertilized or not. This queen's eggs don't seem to hatch at all. What's the trouble?

1. Is it possible for a queen to lay eggs that will hatch neither workers nor drones?
2. Have the bees been destroying the eggs as fast as they hatch?
3. Is the queen worthless, or will she turn out all right later on? OHIO.

ANSWERS.—1. Yes, the case you mention is one, and I had another case. Other cases have also been reported. But you're not likely to meet another of the kind if you die within a reasonable time. The case that came under my observation is the only one I ever met in 45 years' experience.

2. No, the workers are probably not in the least to blame. I don't know what the trouble is, but there is some defect about the queen that prevents even drones being reared from her eggs.

3. Worse than worthless. Please send her to Dr. E. F. Phillips, Department of Agriculture, Bureau of Entomology, Washington, D. C. Possibly he might give us some light on the subject.

Non-Swarming Methods and Bees

1. In the 1895 April Bee-Keepers' Quarterly, Mr. Heddon says that out of 600 of his colonies only 15 or 16 percent swarmed, as by his hive and methods he weeded out the swarming impulse. Would not such methods be advisable for comb-honey producers in Northern Michigan?

2. One of my neighbors, by cutting out queen-cells every 8 days in the Heddon hives, in Hoffman frames, got as high as 250 pounds of comb honey per colony. As inverting the Heddon hive is claimed will cause the bees to destroy queen-cells, would not the use of such a hive be less labor for the practical comb-honey producer? Will interchanging such hives cause bees to destroy queen-cells?

3. As Mr. McGuire, of North Carolina, claims black bees there will swarm hardly any, would not the introduction of such a race early in the spring solve the non-swarming problem in the Northern Michigan raspberry regions, and be a boon to comb-honey producers there? With such a strain I could, in a good season, obtain 100 pounds of comb honey per colony without Mr. Davenport's splendid method.

4. What makes the bees up here swarm so much that Carniolans can't excel them? They are Italian-hybrids in Hoffman frames, in double-walled home-made hives, twice the thickness of the fine factory hives. The bees increased rapidly in the spring, but blasted our hopes of a honey crop by persistent swarming. Would not pure Italian or pure German bees be a better non-swarming strain?

5. Am I not correct in believing that more comb honey can be gotten from the brown German strain here than from the Italians or hybrids?

6. Are bees in the Michigan raspberry regions more prone to swarm than in more southern cultivated regions.

NORTHERN MICHIGAN.

ANSWERS.—1. Any method that would weed out the swarming impulse would be exceedingly desirable in Northern Michigan, or anywhere else for producers of comb honey, or indeed for producers of any kind of honey. So long as there is variation in the matter of swarming, some bees being much more inclined to it than others, it does seem an impossible thing to produce bees that would be practically non-swarmers. At least, it ought to be possible to come as near to non-swarmers among bees as to non-sitters among poultry. It is not likely that the hive would make much difference, any farther than to give plenty of room and ventilation. The chief thing to do is to breed constantly from stock that shows the least inclination toward swarming, at the same time keeping in view the avoidance of the things well known to

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favor swarming, such as crowding and lack of ventilation.

2. Some years ago there were great hopes that the bees could be induced to destroy queen-cells if once in so many days hives were turned upside down, and reversible hives were invented for this purpose. But it turned out that the plan was not reliable. Indeed, it is found that even if reversing would cause the destruction of queen-cells, this would not be a sure preventive of swarming, for when the attempt is made to thwart the bees by cutting out all cells, they will in a good many cases swarm without waiting for cells.

3. Some black bees will swarm less than black bees in general, and some Italians will swarm less than Italians in general, but if ever a non-swarming strain worthy the name is attained it is more likely to be Italian than black. Among Italians there can be found bees just as little given to swarming as among blacks, in all probability, and as Italians are in general better bees, they are the ones to work with in aiming toward non-swarming. If you are aiming for that 100 pounds of comb honey per colony in a good season, you will probably reach it more quickly with Italian blood. At any rate, it is no great trick to reach it here with Italian blood predominating, and Northern Michigan is supposed to be a good deal better honey region than this.

4. I don't know what makes some bees swarm so much more than others; I only know the fact. Evidently you have bees that are bad swarmers. The introduction of pure Italians, or of pure blacks, would be likely to reduce the amount of swarming, and the introduction of a good strain of hybrids or crosses might reduce it just as much. The advisable thing for you is to introduce pure Italian blood. After you've done your best in that direction, you are likely for several years to have still more or less black blood.

5. I don't know all about your locality, but my impression is that in almost any locality, if not in any locality, Italians will outstrip the blacks in honey, and if rightly managed it is possible that a cross of Italian and black blood may give more honey than either blood pure. But I would try as much as possible to work toward pure blood.

6. I don't know. I think not; but it may be that some one with experience in the northern raspberry regions, and also farther south, will tell us about it.

May be the Bee-Moth

I have had only 2 years' experience with bees. I like the work, but find very little money in them so far. I have 5 colonies. They have cost me about $50, and have gathered but 20 pounds of surplus honey in the 2 years. I have a colony of black bees that I gave an Italian queen about 40 days ago. I see now they are busy carrying young ones out that are nearly old enough to fly; some dead, and many alive. Upon examination, I do not find anything like foul brood, but the colony has weakened one-half, and is gathering very little nectar for brood purposes. Kindly explain matters. MISSOURI.

ANSWER.—I don't know with so little information, and can only guess. You are doubtless right in thinking there is no foul brood in the case, for in foul brood young bees dead and alive are not carried out of the hive, the larvæ dying in the cells and rotting there. It is likely that the bee-moth is the guilty party. The colony has probably been weak, and the larvæ of the bee-moth have made their galleries through the cappings of the combs, mutilating the young bees so that they are carried out by their older sisters. If my guess is correct, you ought to be able to see upon inspection the said galleries or webs. It will help somewhat if you will dig the worms out of them. With a wire-nail or other pointed instrument, dig into one end of the gallery, then beginning at the other end dig along till the worm comes out where you first began, when you may take your revenge. After a fair number of Italian bees have taken possession, you may safely trust them to keep the moth at bay. If wax-worms are not present, then I don't know what the trouble is.

Heat Breaking Down Combs of Honey

My bees are doing nicely now, but I have trouble with combs of honey breaking and dropping down, caused by the heat. I have covers on all the hives, but the sun strikes the hive front. Is there any remedy for this? ILLINOIS.

ANSWER.—Most likely the trouble is all over before this, for by the time your question reached me, a sudden change in the weather made it almost too cold for bees to fly at all. Yet there was some very hot weather in September, and combs might break down from it if they ever broke down from heat. Certainly they ought not to break down from the sun striking on the front of the hive. I'll venture the guess that they would have broken down if the sun had not touched the front of the hive. The probability is that two things were responsible for the trouble. One was that the entrance of the hive was too small, giving the bees too little chance for ventilation. The other was that there was too little chance for circulation of air about the hive, buildings, trees, or bushes preventing a free movement of air. Years ago I had combs melt down in a hive—I think I never had them melt down in any other case—and the sun never shone on the front of the hive, nor on any other part of the hive. The hive stood in a very dense shade, a thicket of bushes on one side, and tall corn on the other. The entrance was not very large, but I think the combs would not have melted if the hive had stood out in the sun all day long, provided there had been full chance for the breeze.

Wintering Nuclei Over a Strong Colony

1. Can a nucleus be wintered on top of a strong colony by placing a queen-excluding board between? That is, put two or three 1 or 2 frame nuclei in a hive and put it over a strong colony with plenty of honey?

NEBRASKA.

ANSWER.—1. I don't know that any one has ever tried exactly the thing you mention. Something like it is done in the Alexander method of putting a weak colony over a strong one in spring; but in that case it is not continued more than 3 or 4 weeks. If continued through the winter, it is very likely there would be more or less loss of queens. A safer plan would be to use wire-cloth instead of a queen-excluder, so that there would be no communication between the bees below and above. Of course an entrance to the outside would have to be allowed to each of the nuclei. If outdoors, these entrances should be very small, and the entrance to the lower colony would need to be less than with no entrances above.

That Lapse-of-Memory and Bee-Sting Case

As a further contribution to the lapse-of-memory case, on page 759, I am glad to give the following note from Dr. Davis R. Emmons:

I have read with interest your answer in the case of the bumble-bee sting on the ear. I wish to compliment you for the manner in which you sum it up, and certainly in writing for publication in a bee-paper it would be very hard to improve upon. However, in private it looks to me as if the poison, diluted and in small quantity, had in some way reached the brain-cells that have to do with memory. I think that a few of the small branches of both the posterior and anterior auricular arteries pierce the cranium, but ordinarily in this case it would be returned to the heart through the lateral sinuses without entering the brain. In exceptional cases, however, I think it would be possible, and I can but think that this has taken place with the young man. The paralyzing effect of formic acid may have quickly closed the capillaries in the natural channel, thus forcing it into some unnatural course.

Of course, this is only theory, and intended as pleasant discussion.

DAVIS R. EMMONS, M. D.

This view may be entirely correct, the only thing to which exception should be taken is that Dr. Langer's investigations show that the active poison principle is something separate and apart from formic acid, and, if I am not mistaken, alkaline. That, however, makes no material difference in the case.

Frame-Spacers—Best Size of Section

1. When I started my apiary, 2 years ago, I bought 5 Danzenbaker hives, but after one season's use I considered them too shallow, for the bees carried too much propolis into the sections; moreover, I consider it unnecessary labor to handle 10 frames when an 8-frame dovetail hive contains the same comb-space. I had the good fortune to sell the hives and replace them with the 8-frame dovetail hive with Marbach-Hoffman frames. Do you consider these Marbach metal-spacers preferable to the V-edge? The reason why I ask is, because I intend to buy more hives soon. I find in using the metal spacers that the bees always fill with propolis the space beneath the tin, and I have wondered whether the self-spacing V-edge (which I never have used) would not save the work for the bees, and at the same time answer my purpose as well.

2. What do you consider the best size section? I am using the 4x5 plain section, because I thought the bees more likely to begin work in them than in those of smaller size.

SUBSCRIBER.

ANSWERS.—1. The chief objection to the Hoffman frame is the amount of surface in contact between two adjoining frames, the greater such surface the greater chance there being for bee-glue and for killing bees. The Hoffman was considered an improvement on the closed-end frame, because only part of the end-bars came in contact, instead of having the end-bars touch throughout their whole extent. It may be said in passing, that notwithstanding the objection to having so much surface in contact, some still prefer the closed-end frames because of the indisputably greater warmth. The first Hoffmans had not only the end-bars touching, but quite a space of the top-bars, and it was an improvement when they were made with only the end-bars touching. It was counted a still further improvement when one shoulder of the end-bar was cut to the V-form, both because there was less impinging surface, and because the sharp edge would cut its way into the bee glue when the frames were crowded together. Some, however, think the square shoulder better than the V-edge, as the bees have only the greater temptation to fill the angle with glue, and there is a greater tendency on the part of the sharp edge to split off. The Marbach metal spacer is an improvement, because anything that makes the point of contact less is an improvement. Whether it will prove as great an improvement as anticipated, remains to be seen after the bees have had a chance for a few years to get in their work at gluing, for where the space is less than ¼ inch it will be glued up. Even after the bees have done their worst it will be an improvement.

Whatever the difference between the two kinds, there is still greater difference between the better of the two and the simple metal spacers used by myself and others. The smaller the point of contact the better, so long as it is not small enough, or sharp enough, to force its way into the opposing wood. That metal spacer is nothing more nor less than a common wire-nail, rather heavy, 1⅛ inches long, with a head something less

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than ¼ inch across, and galvanized or rusted, so as not to be smooth enough to be crowded farther in when the frames are crowded together. One of these is driven into the top-bar at one end, and another within 2½ inches or so of the bottom end of the bottom-bar on the same end, and the same thing repeated on the other side of the frame at the opposite end. A guage is used to drive the nails in to exactly the right depth, but in Europe thousands of such spacers are in use with heads of such thickness that they may be driven in the correct depth automatically. After using thousands of these spacers for a number of years, I am more pleased with them than ever, but if I had it to do over again, I would try very hard to get the automatic sort of nails. You may ask why such nails as spacers have not come into use more generally. I think the chief reason is that manufacturers and dealers object that the nails will be in the way of the uncapping knife. But what difference does that make to those who work for section honey entirely? Neither ought the nails to be so much in the way of the uncapping knife, as they are only at one end on each side.

2. There isn't really such a great difference in the matter of size of sections, and I am somewhat skeptical as to their being anything better than the kind most generally in use, the 4¼x4¼, although I have tried the other kinds, some of them on a pretty large scale. I doubt the correctness of your idea that bees will begin sooner in a 4x5 section. The width of the two is about the same, and if the bees begin building at the top, as they always do, they must begin in the taller section farther away from their previous work than in the one ¾ inch lower down. Looks as if they would prefer the one that allows them to start their work the lowest down, doesn't it?

Hive-Ventilation in Moving Bees—Entrance-Blocks—Thin or Extra-Thin Section Foundation

1. What is the highest temperature that you consider safe in moving bees without ventilation? Say that you had to move them when the thermometer stood at 50 degrees, how much ventilation would you give?

2. In making the entrance-blocks, as described on page 47 of your "Forty Years Among the Bees," would it not be better to make the entrance with two spacing nails on one edge of the board instead of cutting the notch?

3. Do you use thin surplus foundation, or extra-thin, in the sections? I think the question is not answered in your book.

ILLINOIS.

ANSWERS.—1. With the thermometer at zero it might be safe to move bees without ventilation, but even then a strong colony might be the better for it, for the moving would be likely to stir them up to so much action that they would need fresh air. When I move my bees in fall and spring, they have no other ventilation than that afforded by the entrance covered with wire-cloth. But then my entrances are 12x2 inches. Still, when I had entrances 12x⅜, years ago, that was all the ventilation they had, and the temperature was sometimes a good deal above 50 degrees. So I would feel safe in saying that at 50 degrees I would allow a ventilating opening of 12x⅜, and perhaps half as much would do.

2. One of the sad things about writing a book on bee-keeping is that by the time the ink is dry some of the things in the book are not true. I don't use entrance-blocks such as described in the book you mention. Unless wedged in *very tight*, there was danger of the blocks falling out of place, and if wedged very tight, the sides of the bottom-board were crowded apart. So this year I used an entrance-board of the same size, only ¼ inch thick, being held in place by a small wire-nail at each end driven through the board into the front of the hive, but only partly driven in, so as to be withdrawn easily. Your question, however, has nothing to do with that. You want to know whether, instead of having at one lower corner a hole an inch square, it would not be better to have a shallow space extend the entire entrance. The chief idea of that 1-inch hole probably was that there was no danger of its being clogged. If the entrance ran the width of the hive, it would hardly be less than ¼ inch deep, making the opening amount to 3 square inches, or three times as much as the 1-inch hole. That lets in more cold air than we care for, and yet there is some danger of clogging, with no greater depth. You will see that the square hole allows the smallest entrance without danger of clogging.

3. Thin. I'll tell you why. The best I can do, there will be times when sections are on and the bees are not working in them. It may be before they begin work, or after the harvest has closed, or a few days lull in the middle of the harvest. At such times the extra-thin foundation is likely to be gnawed down in a very unpleasant way, and they are not so bad on the thin. If you don't have the same trouble, you will wisely use the extra-thin.

Swarm That Staid Out Long—Poor Season

I had a similar experience to that of No. 3, on page 705. A swarm came out with a clipped queen and clustered somewhere in near-by timber, where I could not find them, and it was about an hour before they returned. They were gone so long that I had given up all idea of their returning. I have concluded that the farther they go from the hive to cluster when the queen is not with them, the longer it will be before they become satisfied that their queen is not with them. As to why they gave up the idea of swarming, probably it was that when the queen was returned to the hive there were so few bees left in the hive, or with her, that they made no objection to her destroying the queen-cells, and before the swarm returned, the work of destruction had been completed.

It has been a poor season for honey here. Basswood, from which we got most of our honey last year, was an entire failure this year—not a blossom to be found, owing, doubtless, to late frosts. White clover was abundant, and the colonies that were strong in mature bees did well. I extracted 115 pounds from one colony, and 114 pounds from another, but about ⅓ of them have stored no surplus.

Until June 10 it was very cold, rainy, cloudy and windy, so that colonies, unless they were very strong in the spring, failed to rear sufficient brood to be in condition to take advantage of the white clover harvest, or else spent their strength in swarming. It has emphasized anew the importance of getting all colonies strong before the honey-flow begins.

There are 35 acres of buckwheat one mile from here, and for 2 or 3 hours in the morning the bees are now (Aug. 17) working briskly upon it.

From 75 colonies, spring count, I have extracted 2200 pounds, and taken off about 250 pounds of comb honey. The colonies that did the best were the ones that did not swarm.

J. RIDLEY.

Monticello, Minn., Aug. 17.

Queen-Rearing Years Ago

There is a little honey coming in gradually. There has been a great deal of honey-dew this year. When I used the box-hive I reared some queen-bees by having auger-holes in the side of the hive and a piece of comb in a little box fastened over the hole, and when they hatched out some of them would run in the box; then I would listen, and when I heard one piping in the box I would take it out. This I did in time of swarming, and when I introduced a queen I made a box like a gum, with a hole in the top, and placed the introducing cage, with a queen-bee down through the hole, and when the first swarm came out after a few days I moved the old stand off a little piece; then I put the box on the old stand; then some of the returning field-bees would cluster on the cage; some of them would stop a while and then go to the old hive, and when the caged queen came out she was introduced to the field-bees; then she would take the cluster of bees and follow them in the old hive and lead out a swarm of bees, or else she would drive out another swarm. Then she would swarm, which made 3 swarms in all.

I produce two kinds of honey—what I call tame honey and wild honey. Tame honey will granulate, but the wild honey, which is gathered from flowers, does not. The colony that I have run for tame honey since July 12 has stored 40 pounds. If I did not close down on the bees, they would never swarm.

Some of the people around here say their bees have not swarmed yet this year. I have nothing on the place that has a hoof. My failure was because I could not have field-bees enough in one colony, so I used an extra one for brood, and now I have 5 instead of it, and I got 2 takes of honey from it.

JAMES L. A. MILLER.

Rosebud, Mo., Aug. 14.

Rather Poor Season—Weak Colonies Over Strong—Swarming, Etc.

The American Bee Journal is a great help to the bee-keeper in many ways. One gathers a wonderful fund of knowledge from what others are doing in the business, through this medium. For this reason it is indispensable to the bee-keeper. I consider it a great aid to one, even if he has but a single colony of bees.

The season in this vicinity has been rather poor, although enough honey has come in from white clover to assist the bees in building up strong, and causing swarming. As yet we have not taken off any surplus, and I think it doubtful if we will get any at all, as it is now August. Our surplus usually comes from heartsease, and that is at its best this month.

As I wrote a year ago, I had 12 colonies to put into winter quarters. In the spring I took out but 8, 4 having died from lack of stores and the dreaded disease—foul brood. With the assistance of an expert I have gotten rid of foul brood, and am getting some new queens. I now have my bees in good shape for the fall flow of honey, if any comes.

I now come to a matter of much interest to myself, as well as to others: How to strengthen weak colonies in early spring by putting them on top of strong ones, with an excluder between. I did this with 2 or 3, and lost in every case. That, in my judgment, is an error, as it is a fact that, after you have done this, if the nights should turn cool the bees will go below and leave the queen, which cannot pass through the excluder. By following these suggestions I lost some valuable queens. A bee-keeper never knows what he can do with some of these new suggestions until he tries.

I also tried to prevent my bees from swarming by tiering up one story on top of the others—by taking brood-frames from below and putting in the top story—practically making 2 colonies from 1; however, never doing this with any bees unless they showed indications of swarming.

In the early spring I bought sweet clover seed and scattered it broadcast from the hand along the roadsides, thinking that was the way to do it, and not one kernel came to gladden my vision. What must one do to have it?

Alfalfa is said to be a great honey-plant. My experience is that it is practically worth-

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less, for this reason: Just as soon as it begins to bloom the owner goes into the field with his mower, and, of course, in that way the bees get but little honey from it; and, as a matter of fact, in our locality, if we desire to be successful in a honey-yield, we must provide some other plant for forage. What shall that be? PHILLIP MOHLER.

Lincoln, Nebr., July 31.

Finding Bees in Trees

"Missouri," on page 601, wants to know how to find bee-hives in the woods. As the question was left unanswered, I will tell all I know on the subject.

If we know that there are "wild" bees somewhere, the first thing to find them is to know the direction as near as possible where they can be found. Different methods can be used to mark the direction, when honey-bees live in trees.

An easy way to find at least an approximate direction of wild bees is when you have a field of flowers, such as white clover, alsike, etc., which are sought by bees numerously. On a day when there are no clouds that cover the sun, wait until the sun is sinking in the west, then go to the east side of the field, where you can look all over the field; looking in the direction of the setting sun, you can see bees flying to their home, even at a distance of 200 yards. You need not waste much time for this. You can see dozens of bees leaving the field in a few minutes, and before they are out of sight you know the approximate direction they take. If you see a bee leaving the field right straight, without flying in a circle before leaving, you can judge for sure that the "hive" is near the field; but if a bee flies about 3 circles before leaving, you can judge that the "hive" is not nearer than about one mile. This is in accordance with my own experience, but I had no chance to use it often; however, I was successful with it twice.

Further, every bee-keeper knows that bees need a daily supply of water, and to obtain it they are often found gathering water from some flowers sparingly, even where the ground is only wet. Now, if you once know that there are bees in a certain direction somewhere in the woods, proceed to find their watering-place. You can do this best during a drouth, when they can get water only at certain places. If you find their watering-place, you can be almost sure to have success. If you go around the woods during a dry spell, and you find a place suitable for a watering-place for bees, but no bees gathering any water there, be sure no bees are near.

There are still other methods employed in hunting for "wild" bees, but I suppose these two are the easiest to be used, and they cost only a little time, and under favorable conditions a lot of fun, honey and bee-stings.

Should "Missouri" profit by observing these hints, I would like to have the "fun" of hearing of his success. INDIANA.

"Hybrid" as Applied to Bees

Hybrid—an animal or plant produced from the mixture of 2 species.

Bee—a 4-winged insect of the order Hymenoptera, and family of Apis. There are many genera and species. The common honey-bee is the Apis mellifica, and lives in swarms, each of which has its own queen, its males or drones, and its very numerous neuters or workers. Besides the Apis mellifica there are other species of honey-bees, as the A. ligustica, of Spain and Italy; the A. unicolor, of Madagascar and Mauritius; the A. indica, of India; the A. fasciata, of Egypt; the A. Adansoniæ, of Senegal, and others.—NOAH WEBSTER.

If the common or black bee belongs to the species mellifica, and the Italian bee to the species Apis ligustica, then a bee produced by a mixture of the two is plainly a "hybrid." It is "up to" those who claim that the bees produced by this mixture are not hybrids, to show that the black and Italian bees belong to the same species, or to furnish some other reason why such bees should not be called hybrids. I, like a good many others, have been calling them hybrids, and I want to know the extent of my offense.

The honey-flow is at an end here, and attempts at robbing are very easily provoked.

Leon, Iowa. EDWIN BEVINS.

P. S.—On further thought, there is nothing "offending" in speaking of a mixture of Italians and blacks as "hybrids." In so speaking, we simply give expression to a scientific fact. The trouble seems to be that there is no short word that can be used in this connection which clearly indicates the parentage of the mixture. The word "mule" does this in the case of another mixture, but there is no word yet found which performs the same office for the product of a mixture of black and Italian bees. I think a reward will have to be offered for such a word. E. B.

The "Old Reliable" as seen through New and Unreliable Glasses,
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BEES OF THE ORIENT.

So Frank Benton finds no bees worth bothering with anywhere in Central Asia; but he is giving some attention to 3 different species in India, preparatory to deciding whether we want them or not. Page 634.

HONEY-YIELDS IN ARIZONA.

The Arizona Experiment Station certainly has a daring mathematician to make its honey estimates. All the same, we like him. Pleasant change to read something definite in the place of utter indefiniteness. Alfalfa, 55 pounds of honey to the acre—the acacias, a third of a pound to each big bush—mesquite, 2½ pounds to each tree. Incidentally, we get the size of Arizona vegetation; and that's *reliable*, I reckon. Page 638.

SUGAR NOT BAD FOR THE TEETH.

Glad to hear Dr. Eaton say that it's probably a mistake about sugar destroying the teeth. An argument he uses is pretty pat. Darkies who live largely on sugar-cane, cane-juice and molasses, have excellent teeth. I would add the suggestion, that the craving for sweet, and the bad teeth, are quite likely two separate results of the same morbid cause. By a misinterpretation, the conclusion has been drawn that the sweets consumed caused the bad teeth. In other words, Nature is giving a remedy for a disease, and the doctor forbids and prescribes the contrary. Old, old story of medical foolishness! Page 639.

WEAK COLONIES OVER STRONG ONES.

No, Mr. Oliver, I didn't mean any disapprobation whatever. Lots of old stagers are experimenting at keeping weak colonies warm over strong ones. I should club them, if anybody, rather than the beginners; but there's no call for clubs to be thrown at anybody. Page 643.

BARRELS FOR HONEY.

C. P. Dadant likes barrels for storage—and yet hear him: "Whatever you do, by all means avoid *cheap* barrels, for they will leak all summer, and will waste honey until the honey is granulated." Page 657.

CUTTING CELLS TO PREVENT AFTER-SWARMS.

And E. J. Cronkleton thinks cutting cells to prevent after-swarms is better practise if done *immediately*. Then no rival parties can be formed awaiting the exit of different queens. Sounds like good sense. Page 658.

IDEAS ON WAX-EXTRACTION.

I wonder if the Bartz idea about wax-extraction is practical. Each cell of pollen in an old comb is a lump of definite size. The idea is to crush and rub up the comb very thoroughly and sift out these lumps with a sieve of properly sized mesh. The lumps and the finer matter are then to be separately treated. There appears to be an evident advantage in this; and yet the test of considerable actual practise is needed to tell whether it is worth while. Page 662.

REQUEENING EVERY YEAR (?).

So Dr. Phillips gives the weight of his approval to the idea of young queens in every colony—renewing every year preferably. Page 664.

SELECTION IN BREEDING FOR EGGS IN FOWLS.

Interesting to see what selection does for other creatures than bees. A lot of fowls averaged 120 eggs per year. Their descendants were made to average over 200 in a few years by breeding for number of eggs alone—that is, choosing freely those most out of style in looks and points, if only the number of eggs was greater. Page 665.

DISCOVERIES CONCERNING FOUL BROOD

Almost startling that the Washington authorities find *Bacillus alvei* present in black brood and absent in foul brood, so far as the samples sent in go. Let's be in no pickle or haste, but it looks a trifle as if our previous teaching might in the end require a serious

tearing up. And Dr. Phillips even suggests that Europe and Canada *may* have one foul brood, and the United States a different one. Page 668.

CANADIAN BEEDOM

(Continued from page 832)

be about 30 pounds of stores to carry them safely through to the next honey season.

To make doubly sure, we store in a dry, *warm* place combs of sealed honey, about one for each hive, to be put in the brood-chambers as soon as convenient after they are removed from winter quarters. It is particularly important to have these extra combs in a *warm* place, to avoid granulation.

Extracting and Migratory Bee-Keeping

Our extracting was practically all finished Friday night, Sept. 14. Buckwheat honey averaged up about as well as last year, and so removed the danger we feared of an almost total failure of the 1906 honey crop.

Migratory bee-keeping involves all sorts of experiences, some pleasant, and some quite the opposite. Last season we extracted a part of the surplus of one yard in a tent. There were no trees for shade, and when the sun shone, that tent would have made a splendid solar wax-extractor—almost. The robber-bees found the ins and outs so well that after a few days the machinery was moved to a bee-tight workshop, half a mile away, and the balance of the supers hauled there to extract. It is a splendid idea to start the final extracting before the bees have finished gathering honey. Then robbers do not bother, and what surplus is gathered after the supers are off will help out nicely on winter stores.

This year, one yard had to be extracted in the basement of a bank barn. The stone wall kept it cool, to a certain extent, so that even in extremely hot weather it was possible to keep all windows and doors closed so the smell of the honey would not escape and attract the bees. When we got near the end, and the robbers became pretty lively in the yard and began hunting places to crawl through the stone wall, the extracted supers were all piled out where the bees could go at them freely, and clean up the honey left by the extractor. This gave an artificial honey-flow, and kept things fairly quiet until we could finish up.

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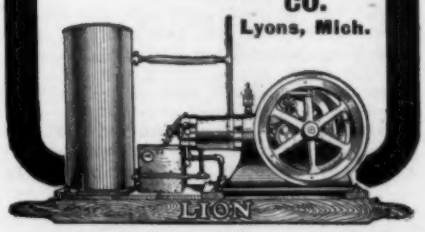

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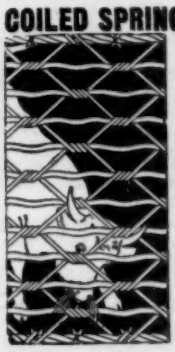

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Clocks like "The Bee-Hive Clock" usually sell in the stores at from $4.00 to $5.00 each, but having them made for us in quantities enables us to offer them at $2.50 each by express, or with the American Bee Journal a year—both for only $3.00. Either Clock or Journal would make an ideal gift.

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Send us **5 New Subscribers** to the Weekly American Bee Journal for one year, at $1.00 each, and we will send you this beautiful "Bee-Hive Clock" **FREE** (excepting express charges). Or, send us **4 New Subscribers** (at $1.00 each) and 50 cents—$4.50 in all. Or, **3 New Subscribers** (at $1.00 each) and $1.00—$4.00 in all. Or, **2 New Subscribers** (at $1.00 each) and $1.50—$3.50 in all.

Only $2.50, f.o.b. Chicago, by Express. Weight, with packing, about 4 pounds.

What Dr. Miller Thinks of the Bee-Hive Clock

Busily ticking away, in the room where I am sitting, stands a genuine bee-keeper's clock (please understand that the word "genuine" belongs to the clock and not to the bee-keeper) .or, as the legend upon the clock has it, "The Bee-Hive Clock." I don't know whether the idea of getting up such a clock was conceived in the brain of the Editor of the American Bee Journal, or whether he got it elsewhere, but the wonder is that such a thing was not thought of long before.

Setting aside all idea of its association with the business of a bee-keeper, there is a peculiar appropriateness in having the minutes and the hours "told off" in a case representing the home of the busy little workers. The glance at the clock, with its ceaseless tick, tick, tick, tick, can not fail to remind one that the flying moments must be improved now or be forever lost, and that suggestion is reinforced by the thought of the never ceasing activity of the little denizens of the hive, always busy, busy, busy, working from morn till night and from night till morn, working unselfishly for the generations to come, and literally dying in the harness.

Let us be thankful that the form of the old-fashioned straw hive or skep was adopted, and not that of any modern affair, patented or unpatented. The latter smacks of commercialism, but the former of solid comfort, for no other form of hive has ever been devised that contributes so fully to the comfort and welfare of a colony of bees as does the old-fashioned straw-hive. It appeals, too, to one's artistic sense as can no angular affair of more modern times. As an emblem of industry, artists have always used—probably always will use—the old straw skep.

Thanks, Mr. Editor, for furnishing us a time-keeper so appropriate for all, and especially for bee-keepers. C. C. MILLER.

Address all orders to **GEORGE W. YORK & CO., 334 Dearborn St., CHICAGO, ILL.**

Something for Our Poultry-Readers.—As there are so many among our readers who are interested in poultry, we publish the following which is pronounced the best of its kind:

CAPONS AND CAPONIZING.

Capons are aptly termed the "finest chicken meat in the world," for there is nothing growing feathers their equal or superior. A capon is neither rooster nor hen—it is nothing else than a capon. After removing the testicles from the cockerel its nature becomes entirely changed. They take on a more rapid growth, are more tame, awkward in carriage and always exceedingly lazy, take on a very heavy and beautiful plumage, the comb and wattles cease to grow, the spurs do not develop as in the cockerel, and being cast off by rooster and hen he soon shows a fondness for the society of little chicks.

BEST TIME TO CAPONIZE.

Fowls hatched any time of the year make fine capons; no ill results follow the operation at any time of the year. The bird should be from 2 to 3 months old (not over 6 months), and weigh not less than 1 to 1½ pounds. This size is equally as important as the age. April, May, June, July, August, September and October are the months generally taken for caponizing, for the reason that spring chickens arrive at proper age and weight during these months; also because cockerels caponized then arrive at the proper age and weight for market during the months of November, December, January, February, March, April and May, at which times there is the greatest demand for them in the cities and highest prices secured.

PROFIT IN CAPONS.

Caponize the chicks and you have at once laid the foundation for a handsome profit in a short time to come. Outside of the cardinal points of profit, the simplicity of the operation (when proper instruments are used), recommends itself to every one. A boy 10 years old can readily perform the operation, and any one can soon become an expert.

To the poultry raiser we would say we know of no source of profit bringing larger returns for the outlay than raising capons, the profit in a great majority of cases being over 100 percent. The question of assured profit is an all-convincing argument in any line, and pre-eminently so to the poultryman whose losses are added to from various unlooked-for sources.

DIRECTIONS FOR CAPONIZING.

From 24 to 30 hours before performing the operation select such cockerels as you intend to caponize (these should be from 2 to 4 months old), confining them in a clean, dry coop, or room without either food or water. The best time to confine them is at early morning, as their long fast will then end about noon of the following day, at which time the operation is performed. Should the day be cloudy or wet do not caponize them, but let the operation go until you have a bright and fair day. It is necessary that you have all the light possible in the matter. Now after slightly wetting the spot proceed to turn down the feathers from the upper part of the last two ribs and just in front of the thigh joint. Pull the flesh on the side down

Making Incision.

toward the hip, and when the operation is finished the cut between the ribs will be entirely closed by the skin going back to its place.

PROPER INSTRUMENTS.

We have laid considerable stress upon having proper instruments in caponizing, and the more we read the literary effusions appearing in numerous papers to-day touching caponizing instruments, the more need we feel there is to caution the inexperienced ones. While it is not cruel to caponize, it is inhuman to butcher or use unnecessary pain.

CAPONIZING IS NOT CRUEL.

A large number of persons hesitate in caponizing, feeling it to be cruel to the bird. To these we bring our experience in this matter proving to the contrary. This is a greatly mistaken notion, and the operation bestows an unlimited amount of kindness on the bird, even if there were no other considerations or returns. The writer has seen cockerels fly at one another time and again, tearing flesh and feathers with beak and cutting with spurs. Before the combatants could be separated there has been a disfigured comb, probably a blinded eye, and a generally cut-up bird. This is the essence of cruelty.

Inserting Spreader.

After caponizing the habits of the birds are entirely changed, their disposition is quiet and peaceable, habits mild and tending to a solitary life and perfectly contented wherever situated. They no longer chase about the farm spoiling for a fight and running off flesh as fast as put on. They no longer arouse the whole neighborhood from morning until night by their incessant crowing, but, on the contrary, become models of good dispositions, leading a quiet life that will surely bring

Removing Testicles.

large returns to the raiser. An operation that does away with so much inborn evil can not be considered cruel.

Lansdowne, Pa. CHARLES F. PILLING

American Bee Journal

CONVENTION NOTICES.

The Southern Bee-Keepers' Association will meet in Atlanta, Ga., Oct. 11 and 12, 1906, during the State Fair, on the Fair Grounds. All interested are invited to attend.

JUDSON HEARD, Sec. and Treas.
J. J. WILDER, Pres.

Illinois and Wisconsin.—The annual meeting of the Northern Illinois and Southern Wisconsin Bee-Keepers' Association will be held at the Court House, in Rockford, Ill., on Tuesday, Oct. 16, 1906. The meeting begins at 9 a.m. and lasts all day. All interested are invited to attend. B. KENNEDY, Sec.
Cherry Valley, Ill.

National in Texas.—The National Bee-Keepers' Association will hold its annual convention Nov. 8, 9, and 10, 1906, in San Antonio, Texas. These dates occur at a time when the Texas Fair is in progress, and low rates will be in force, locally, for several hundreds of miles out of San Antonio, and, at the same time, there will be home-seekers' rates available from other parts of the country.
Flint, Mich. W. Z. HUTCHINSON, Sec.

Connecticut. — The Connecticut Bee-Keepers' Association will hold its 15th Fall Convention in the State Capitol at Hartford, Friday, Oct. 12, 1906, beginning at 10:30 a.m. An interesting list of topics for discussion has been arranged. All persons interested are cordially invited to attend, as matters of great importance are to be brought before the meeting. Bee-keepers are invited to bring something for the Exhibition Table—anything they may think will be of interest.

J. ARTHUR SMITH, Sec.

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This Emerson stiff-board Binder with cloth back for the American Bee Journal we mail for but 75 cents; or we will send it with the Bee Journal for one year—both for only $1.50. It is a fine thing to preserve the copies of the Journal as fast as they are received. If you have this "Emerson" no further binding is necessary.

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Queens from our fine strain of 3-band Italians will not disappoint you; bees are gentle and the best of honey-gatherers. Queens are large and prolific, and every one guaranteed. Untested, 50c, $6 per doz. Tested, $1 each.

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Select Untested Queens, $1. Tested Queens, guaranteed to produce 5-banded bees, $2.50 each.

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Queen-Button for Bee-Folks

This is a very pretty thing for a bee-keeper or honey-seller to wear on his coat-lapel. It often serves to introduce the subject of honey, and frequently leads to a sale.

The picture shown herewith is a reproduction of a motto queen-button that we are furnishing to bee-keepers. It has a pin on the underside to fasten it. Price, by mail, 6 cents; two for 10c; or six for 25c. The American Bee Journal one year and 4 buttons for $1.10. Address all orders to

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EARLY ORDER DISCOUNT During September I will offer a discount of 7 percent on Supplies for next season's use. In October the discount will be 6 percent. Cash must accompany order.

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☞ Remember, that each is a separate offer, and must be taken before Nov. 1, 1906, if you want the advantage of these special prices.

If more of the same kind of Queens are wanted, order at these prices during September and October: 3 for $2.00; 6 for $3.75; 12 for $7.00. **Now is the time to re queen.** Or, we will send 1 Queen **Free as a Premium** to any subscriber (whose own subscription is paid up at least to the end of 1906), for sending us $1.00 and the name and address of a NEW subscriber for 1 year.

A free sample of the Weekly American Bee Journal on request; or a **"trial trip"** of 3 months (13 copies), sent for only 20 cents. Regular price is $1 a year. Address,

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Moore's Strain of Italians

AS RED-CLOVER WORKERS

Wm. S. Slocum, Newport, R. I., writes:

"My friend, W. O. Sweet, West Mansfield, Mass., asked me about 2 years ago where he could get good queens, and I referred him to you. To-day he called on me and said he noticed the colonies with your queens were storing much faster than others. He went immediately to his red clover field, and saw bees working there freely."

Untested Queens, 75c each; six, $4; dozen, $7.50. Select Untested, $1 each; six, $5; dozen, $9. Safe arrival and satisfaction guaranteed. Descriptive circular free.

I am now filling orders **By Return Mail**, and shall probably be able to do so until the close of the season.

J. P. MOORE, R.F.D. 1 **Morgan, Ky.**

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Something You Want.

Our specially prepared Gloves soften the hands and prevent and cure chapped hands. The fabric contains a preparation which prevents the gloves from becoming hard and stiff We furnish them without armlets or sleeves for using in sweeping, gardening or general housework, driving or outdoor work. They are just the thing for driving in the rain, as they are absolutely waterproof. If worn at night they keep the hands soft and white.

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If you haven't our 1905 catalog, send for one and a free copy of the American Bee-Keeper (50c a year. Address,

THE W. T. FALCONER MFG. CO.
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Honey and Beeswax

CHICAGO, Sept. 8.—The receipts of comb honey are quite large and there is also a good demand for it, so that prices are well maintained at 15@16c for No. 1 to fancy; anything short of these grades is not selling freely and ranges from 1c to 3c per pound less; buckwheat, 12½c; dark grades, 8½10c. Extracted, white, 6½@7½c; amber, 6@7c; dark, 5½@6c. Beeswax, 30c. R. A. BURNETT & Co.

TOLEDO, Aug. 20.—The market on honey has not changed much since our last quotation. Bee-keepers seem to be holding their goods expecting large prices. Fancy white comb brings in a retail way 16@17c; No. 1, 15@16c, with no demand for dark. Extracted white clover, in barrels and cans, brings 6½@7c; but very little has been offered as yet. Beeswax, 26@28c.
GRIGGS BROS.

INDIANAPOLIS, July 28.—Fancy white comb brings 16@17c readily; No. 1, white, 2c less per pound; the demand is not supplied, but higher prices would decrease the demand. Best grades of extracted honey bring 8@9c. Good average beeswax sells here at $33 per 100 pounds.
WALTER S. POUDER.

PHILADELPHIA, Sept. 20.—Comb honey has been arriving quite freely and the demand is quite brisk at this time. Prices seem to have an upward tendency. The outlook is for still higher prices. We would advise parties who have comb honey to ship, to send it in at once and sell it while the demand is on, for September, October and November are big honey months. We quote: Fancy white comb honey, 16@18c; No. 1, 14@15c; amber. 12@14c. Fancy white extracted, 8@9c; light amber, 7@8c.
We are producers of honey and do not handle on commission. WM. A. SELSER.

NEW YORK, Aug. 18.—There is a good demand for new crop comb honey, but arrivals are very small as yet, and will continue so for a week or two to come. We quote fancy white at 15c; No. 1 white at 14c; No. 2 white at 12c; it is too early as yet for dark or buckwheat. Extracted is in good demand at 6½@7c for white, 6c for light amber, and 5@5½c for dark. Southern, common average grade, 50@55c per gallon; better grades at 60@65c. Beeswax firm at 30c.
HILDRETH & SEGELKEN

Headquarters for Bee-Supplies

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WANTED—HONEY

White Clover Extracted and Comb. Mail sample and state lowest price expected, delivered in Cincinnati. We pay cash on delivery.

Let me book your Order for **QUEENS** bred in separate apiaries, the **GOLDEN YELLOWS, CARNIOLANS, RED CLOVERS and CAUCASIANS.**
For prices, refer to my catalog, page 29.

At Root's Factory Prices

C. H. W. WEBER CINCINNATI ...OHIO...
Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

CINCINNATI, July 21.—We are having new comb honey to arrive and it finds ready sale; fancy white at 14½c; and No, 1 at 13½c. Extracted, white clover, in barrels, at 7½c; in cans, 8½c; amber, 5½@5½c. Beeswax, 30c.
C. H. W. WEBER.

DENVER, July 30.—Some small lots of new comb honey coming in now; crop promises to be light. At the present we are selling No. 1 white at $3.25 per case of 24 sections; No. 2 at $3. We are paying 24c per pound for clean yellow wax delivered here.
THE COLO. HONEY-PRODUCERS' ASSN.

KANSAS CITY, Sept. 10.—Receipts of both comb and Extracted honey are light at present and the demand is good. We quote: No. 1 white comb, 24-section cases, $3; No. 2, $2.75. New extracted, 6@6½c. Beeswax, 25c.
C. C. CLEMONS & Co.

CINCINNATI, Sept. 18.—The demand for comb honey is good; fancy and No. 1 selling freely at 15@16c; lower grades not wanted at any price. The market on extracted honey is quiet, as quantities remain unsold from last season. We quote amber at 5½@7c, according to quality. Fancy extracted white clover at 7½@8c. We are paying 29@30cfor choice yellow beeswax free from dirt. THE FRED W. MUTH Co.

WANTED

To buy for cash, Fancy Comb and Extracted Honey. R. A. HOLEKAMP,
31A13t 4263 Virginia Ave., ST. LOUIS, MO.

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WANTED

To hear from parties with their lowest cash price, delivered here, for fancy comb honey in no-drip shipping-cases; also extracted honey. We are cash buyers, and remit on receipt of goods.
THE FRED W. MUTH CO,
27Atf 51 Walnut St., CINCINNATI, OHIO.

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